MYRMECIA

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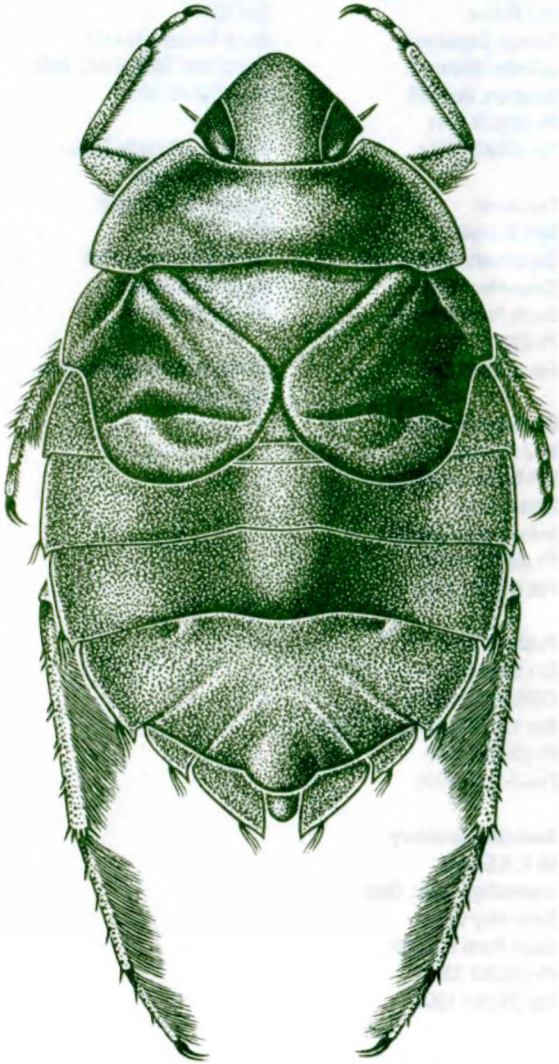

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(Office Bearers continued on rear cover).

THE COVER

The cover illustration for this year's ***Myrmecia*** features an illustration from the new edition of "Insects of Australia". The illustration is by Dr. S.P. Kim, one of the CSIRO artists who have been working on the numerous new plates for the book. The species shown is *Aphelocheirus australis* Usinger, a member of the family Naucoridae (Hemiptera). This aquatic species occurs rarely in northern Australia. The morph illustrated is brachypterous.

NOTICE

Statements made in ***Myrmecia*** do not necessarily represent the views of the Australian Entomological Society. Items printed herein should not be reproduced without permission of the author of the material.

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MYRMECIA

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These rates apply to camera-ready copy supplied by the advertiser. Where this is not supplied a small additional charge may be made for the layout.

In addition, loose inserts and pamphlets supplied by the advertiser will be included in a mailout for $50 per item. The items should be of a size which will not project beyond the pages of ***Myrmecia***.

Copy Deadline for Next Issue

Material for publication in the February 1992 issue of ***Myrmecia*** should be in the hands of the Editor-nominee at his address below by **Friday, January 24**. Fax transmission may be used to (02) 683 9714 but care should be taken to ensure legibility and hard copy should be posted simultaneously. Material may be submitted on floppy disk. Any common word processor format is acceptable.

Murray FLETCHER
News Bulletin Editor (Nominee)
Bilogical and Chemical Research Institute
PMB No. 10 RYDALMERE NSW 2116

EDITORIAL

This is the last issue of ***Myrmecia*** I'll be editing and I'm pleased to announce that Murray Fletcher, homopteran taxonomist at the Rydalmere laboratories of NSW Agriculture in Sydney, has agreed to put his name forward for election at the Hobart AGM in early February next year. He has just spent a couple of days with me in Brisbane going through the ropes of producing this issue and will edit the February 1992 issue himself in Sydney. Please direct copy to him at his address or fax number on this page. Murray has long editorial and organising experience with the Entomological Society of New South Wales and I urge the support of our members in making his transition to ***Myrmecia*** editor as smooth as possible.

Our ten years of production of ***Myrmecia*** here in Brisbane has involved some fun and games, a lot of hard work, a great deal of satisfaction, an occasional drama (or three!), and one of two heartbreaks. Initially, when I was appointed in 1982, the position of News Bulletin Editor was a non-voting, non-elected appointment by the Executive and the task was essentially a one-man-band affair. In 1984 the Constitution was revised to make the Editor an elected Council position and to provide for the appointment of an Assistant News Bulletin Editor. This, together with the provision of more funding and the recognition of the News Bulletin's central role in the Society, began the evolution of what has grown to be quite a team of people who have helped me crank the Bulletin out year after year in Brisbane. I'm greatly indebted to all of these good folk.

The earliest partner was our printer Dean Brown, then of Vibropress but now trading as All Clear Offset Printers. He

has printed every issue at the cheapest rates around. His reliability and amiable personality have made our long association a pleasure.

At the Museum Geoff Thompson has served as Assistant Bulletin Editor since 1984 (*de facto* since 1982!) and has became an authority on screening photographs, making illustrations fit spaces they weren't meant to fit, proof reading, and coping with an Editor *in extremis*. I don't know how he managed, particularly the last! Peta Woodgate's efficient typing has transformed Regional Councillors' hurried scrawl (and more recently, blurred faxes) into beautiful copy since 1983. Lynette Dickfos has typed more "exciting" correspondence than she cares to remember and a few years ago took over the mailing operation from an inefficient commercial operator and turned that traumatic task into a pushover.

The clean, stylish look of ***Myrmecia*** is due to graphic designer and screen jockey, Paul Ramsden, whose inclusion in the team three years ago turned a 3 or 4 night horror task of scissors and paste into an instantaneous pile of camera-ready laser print-out. With just a little help from "PageMaker" and the Macintosh he dragged me into the computer age.

Two others have been of especial strength with

At the Queensland Museum on November 20 new **Myrmecia** Editor-nominee Murray Fletcher met with the team who produced the last Brisbane issue after ten years. From left (front) Peta Woodgate, lightning word processor, Lynette Dickfos, mail distributor extraordinaire, (rear) Geoff Thompson, Assistant News Bulletin Editor, Geoff Monteith, Editor, Murray Fletcher, Editorial nominee, and Paul Ramsden, responsible for graphic design and layout.

Myrmecia without being directly concerned with production. The late Phil Carne, during his long years as Secretary and Public Officer, gave rock-solid support, dependability and advice in the constitutional procedural matters which ***Myrmecia*** must transmit if the Society is to function smoothly (and legally, since we're an incorporated body). His was the sort of unobtrusive support which one only notices when it is no longer there. We are now the largest biological Society in Australia and keeping track of our members and their mailing addresses is a prodigious task. Entomologists are a remarkably peripatetic lot! Long serving Business Manager John Donaldson took that job from my shoulders several years ago, since when his meticulous reliability has made address matters a dream. If only our members were as reliable at sending their address changes in! John's departure from the position of Business Manager leaves a hard act to follow.

We've made many innovations to the News Bulletin in the last decade. Two have given me great satisfaction. The first was the introduction of our annual compilation of Postgraduate Projects in Entomology. This was an idea I pinched from the NZ Ent Soc. It struck an immediate chord in Australia and, by soliciting membership from those students listed who weren't already members, we've managed to use the compilation to swell our membership enormously. "Catch 'em young and they'll stay members forever" is one of my adages. Thanks go to Dinah Hales, and later Jenny Anderson, who took over compilation of the list as I approached burnout. The other pleasing innovation was the adoption of ***Myrmecia*** instead of the long-winded **News Bulletin of the Australian Entomological Society** as the periodical's name. This didn't come about without misgivings from some members, and it was a rather close vote in Perth which ratified the decision. But I think we've all come to like its brevity. My last campaign is to get people to pronounce it correctly....it has long vowels and a soft "c" ... try it ... "murr – meesia". Ahh ... that's lovely. Bye.

Geoff MONTEITH
News Bulletin Editor

NOTES FROM THE PRESIDENT

The year is drawing to its usual rather frantic close which for the University staff among us includes heaps of marking of practical work and examinations, and Honours and postgraduate seminars — a series of deadlines extending well into December. Simultaneously, this year, there will occur the assessment of the Society's Phil Carne Prize, research grant applications and Mackerras Medal nominations, so I foresee a somewhat larger than life lead-up to Christmas. The Society's deadlines become a little more urgent because I'll be away from home base for several weeks during late December and early January, and will try to finalise as much as possible of the Society's business before leaving.

I received a thoughtful letter from Myron Zalucki (University of Queensland), who raises some important issues relevant to the Society's future role. He asked whether official accreditation (as for doctors, lawyers, accountants, etc.) of entomologists for work in particular disciplines

should be considered, as a possible means of providing entomologists with a higher professional status and profile, and he suggests also that publicity on the role of entomologists would be valuable. A further and major concern is the education of entomologists, with just one university department of entomology remaining. Dr Zalucki concludes that "a national strategy for the promotion of Entomology, and Education of Entomologists needs to be developed". These are major undertakings and would see the Society move further towards the role of a lobby group on behalf of the profession, rather than what I see it as at present: primarily an association of people with common interests in insects and their biology (whether pro or con). In practice, any action on a national strategy would demand a major commitment of time by a group of interested people, firstly to discover the wishes of the membership and then to develop effective policies and activities. Time, unfortunately, is becoming an increasingly rare commodity, and its scarcity results in a lack of forward planning for long term objectives such as those proposed by Dr Zalucki. One would like to think that this situation will improve, but there are no obvious signs that this will occur. Opinions on the proposals and their feasibility would be welcome, again.

This *Myrmecia* is a milestone one from several points of view. It is the last that Geoff Monteith will be organising during his 10 year period as Editor. Under his management, the old News Bulletin has seen a change to its present name, and substantial changes in format and production methods. Geoff has been tireless in keeping the Regional Councillors (and the Executive) up to scratch in providing material, and has furthermore provided, solicited or initiated many of the regular and occasional items that we have come to expect. Members of the Society, I am sure, would want me to express our gratitude to Geoff for his enormous contributions to keeping everyone in touch and publicising events in Australian entomology. Magnificent, Geoff, and all our thanks.

Another long-serving office bearer of the Society has announced his intention to stand down from the next AGM: John Donaldson has been Business Manager since 1976 and has unobtrusively kept the Society's business affairs — particularly sales of publications — in order for all that period of time. Congratulations and thanks to John for a job well done. The Executive would be delighted to hear of any potential successors to John — preferably but not essentially based in the Brisbane area.

After those two remarkable periods of service, it comes as a bit of a let-down to say that the Perth Executive has almost completed its statutory four years in office. Vice President James Ridsdill Smith is the only survivor of the original team, with secretary Jon Majer and treasurer Peter Davis having replaced John Sandow and Anne Hill respectively in mid-term. From all these people and their assistants the Society has had great service: the majority of members probably has little idea of how much is involved in the week-by-week running of the Society's business, and it is a credit to all concerned that things generally continue to progress smoothly in these difficult times. In thanking the outgoing Executive, I would like also to welcome the Adelaide group and wish them well for their term of office. Let me once more urge you, the general membership, to support in a constructive and positive way, those who work so hard for the Society.

This is also my last appearance on these pages as President of the Society. My very best wishes for Christmas and the New Year to all members — I look forward to seeing you in Hobart at the beginning of February.

Dinah HALES
President

Executive Quarterly Report

MEETINGS

The Executive met on 13 August and 17 September.

NEW MEMBERS

We welcome the following new members:

Elected 13 August, 1991

Miss J. LATCHFORD, BSc Biol, Grad Dip Environ Impact Assessment, School of Biology and Environmental Sciences, Murdoch University, Murdoch, WA 6150. Jane's interests include mosquito control, salt marsh ecology and environmental impact analysis.

Miss L. OLLEY, BSc Hons, Entomology Department, University of Queensland, Qld 4072. Larraine is a student interested in general entomology.

Mr G.M. QUIMIO, BSc Agric (Entomol), MSc Department of Entomology, University of Queensland, QLD 4072. Georgonio is a student with interests in biological control, pest management and insect transmission of plan pathogens/viruses.

Mr N.R. RENFRY, B Agric Sc, Dip App Sc Nat Res, 19 Brenton Avenue, South Plympton, SA 5038. Neil is interested in integrated pest management and parasitology.

Elected 17 September

Mrs M. PRASAD, BSc, GCEd, Zoology Department, James Cook University, Townsville, QLD 4811. Manju is a PhD student and is interested in the feeding ecology of *Epilachna* and the use of plant secondary compounds as alternative pest control strategies.

Dr D.L. EMERY, B.VSc, BSc(Vet), PhD, 60 Minna Street, Burwood, NSW 2134. David has a general interest in Australian entomology including cicadas, macrophotography and resin casting.

Re-elected for Membership

Prof R.E. JONES and Ms L. QUEAL

Changes of Address or Title

Dr P.C.E. BAILEY, Department of Ecology and Evolutionary Biology, Monash University, Caulfield Campus, VIC 3145.

Mr R.S. BUNGEY retires from membership.

Prof Emeritus J.A. THOMSON, 23A Trelawney Street, Eastwood, NSW 2122. Changes from full to retired membership.

Mr A. ERSKINE, c/- 6/9 Tropic Court, Port Douglas, Qld 4871.

Mr D.A. HAUGEN, 507 West Main Street, New Hampton IA 50659, USA.

L. HUGHES changes from student to full membership.

Ms D. RAE, c/- Department of Zoology, James Cook University, PO James Cook, Townsville, QLD 4811.

Mr A. KOTZE, BCRI, PMB 10, Rydalmere, NSW 2116.

Mrs S.A. KULKARNI, Department of Ecology and Evolutionary Biology, Monash University, Clayton, VIC 3168.

B. JENKINS, Institute of Zoology and Animal Ecology, University of Lausanne, Lausanne, CH-1015, Switzerland.

Mr D.J. DAGLISH changes to Dr D.J. Daglish.

A. GREEN, 3 Stewart Street, Launceston, TAS 7250.

FROM THE MINUTES

Preparations are in hand for the forthcoming AGM and Conference in Hobart. We are currently seeking replacements for the outgoing Business Manager and convenor of the Marketing Committee and would be pleased to hear from any interested persons. In view of the fact that the Journal is printed in Brisbane, it is desirable that the new Business Manager be situated in the Brisbane area. Members are also reminded to put in nominations for the office bearing positions which were listed in the previous issue of *Myrmecia*.

A review of the Biological Illustration Competition is currently underway. One of the major changes which is foreseen, is the introduction of a professional illustrator's award.

We are somewhat concerned about the number of unfinancial members at present. One hundred and thirteen members have still not paid their 1991 subscriptions and a further 43 have not paid for 1990 or 1991. We urge all members to ensure that their subscriptions have been paid so that the financial well-being of the Society can be ensured.

Regional News

TASMANIA

Queen Victoria Museum and Art Gallery

The vacant position of Museum Assistant in Zoology has been upgraded to Research Officer and Louise McGowan was selected to fill the position. Louise is a zoology graduate from the University of Tasmania and, consistent with her enthusiasm for the whole gamut of terrestrial invertebrates (and with the Curator's encouragement), will be specialising in being a non- specialist! The Museum zoologists are delving deeply into the (shallow!) coastal lagoons of the State's north-east. Very little work has previously been carried out in the north-east, due presumably to its remoteness from Hobart and a lack of developments in the area that have required EISs to be conducted. All this is about to change through efforts of staff, associates, and contract biologists funded by the Plomley Foundation. Anyone interested in examining any group of aquatic insects or aquatic larvae please get in touch.

Tim Kingston will be taking a working holiday on the North Island during November, driving from the Seacat to Canberra for the "Australian Biota" Conference in Canberra, and then on to Brisbane to spend time working with Barrie Jamieson at Quaensland University on Tasmanian native earthworms. He will then visit a sequence of entomologists, down the length of New South Wales, returning to Launceston on 8 December.

Tasmanian Museum and Art Gallery

Alison Green, Curator of Invertebrate Zoology, officially retired on 21 October, having very noblly expended her long service leave completing some identification tasks for outside projects. Tasmanian Society members (and others) unite in expressing gratitude to Alison for her many years of dedicated service to invertebrate biology and in wishing her well for her retirement in Launceston. There is a rumour abroad that Alison will make a reappearance in the invertebrate zoology section of a north Tasmanian museum!

The Board of Trustees of the Tasmanian Museum recommended to the Department of Education and the Arts some weeks ago that Alison be replaced by another invertebrate specialist. There is as yet no sign of an advertisement for the position; until the new "Director of Museum Services" for Tasmania has been appointed this situation is likely to persist.

Department of Primary Industry

Peter McQuillan attended the annual meeting of quarantine entomologists in Brisbane in mid-October, and on 25 October will attend the Horticultural Policy Committee meeting reviewing the fruitfly situation in Australia. Peter will be heading over to the mainland again in November to attend the Australian Biota Conference in Canberra.

Peter appeals to Society members to please get those registration forms rolling in for the 1992 Annual Meeting in Hobart next February, everyone is saying they're coming but where are the cheques?

Tim KINGSTON
Regional Councillor

AUSTRALIAN CAPITAL TERRITORY

CSIRO Division of Entomology

Sectional boundaries in the Division have been realigned recently. Bill Vogt will become a full-time assistant chief and Paul Wellings will head up the section now called Invertebrate Pests of Livestock and Pastures. Brian Fletcher's section will now be the Insects Affecting Field and Horticultural Crops.

Max Whitten and John Curran attended the International Plant Protection Congress in Rio de Janiero in August. Max gave a plenary lecture on the biotechnological prospects for plant protection and John spoke on the biological and economic feasibility of using entomopathogenic nematodes. Max visited the staff at the Cape Town and Perth labs on the way back to Canberra. John Curran stopped in on Chris Womersley in Hawaii to discuss their mutual interest in nematode anhydrobiosis and field ecology. John was also involved in the recent opening of the Plant Science CRC in Canberra. He attended the recent plant pathology conference in Sydney and participated in a workshop on DNA-based identification systems for plant parasitic nematodes.

The region's first workshop on *Bacillus thuringiensis*, a widely used microbial insecticide for caterpillars and mosquitoes, was held in Canberra in September. Invited speakers included Bill McGaughey (USDA, Kansas), John Bryant (Sandoz, Chicago), Ian Watkinson (Abbott, Chicago), Chris Chilcott and Peter Wigley (both DSIR New Zealand). Altogether over 50 people attended the 3 day workshop

which is continuing to receive attention on radio, TV and in newspapers. Highlights of the workshop were the frank discussions on registration problems, the use of *Bt* on cotton in Australia, transgenic plants and resistance. A detailed proceedings will be put out by CSIRO, while formal publication of the invited papers will appear in Agriculture, Ecosystems and the Environment.

Bill Vogt joined other members of the National Screw-worm Fly Management Committee on a trip to south-east Asia in October. The objective was to negotiate with several countries that have a problem with screw-worm fly and might be prepared to host a pilot screw-worm fly control project.

Jim Cullen had a very busy 3.5 week trip. First stop was Silwood Park where he met with IIBC's director David Greathead, and future director, Jeff Waage on future IIBC/ CSIRO collaboration. Then he spent 10 days at the Montpellier lab, then on to Rome for an FAO meeting, where a draft FAO Code of Conduct for the Introduction and Release of Biological Control Agents was formulated. The final stop was Crete, where he attended part of the conference on the ecology of Mediterranean type ecosystems.

Now that spring has sprung, it's time for field days again. Paul Jupp went to Tamworth for a field day on St John's Wort; Julie Carter represented stored grain at the Grains 200 meeting in Canberra and at the Toowoomba Farmfest. Pheromones, stored grain, blowflies and ANIC featured at the stand at the Murrumbateman field days, ably manned by Sandy Smith, Chris Hunt, Geoff Foster, Dick Vickers, Paul Jupp, Andy Walker, Julie Carter, Leslie McKenzie and Matthew Smyth. The division's work has been in the news again with the nematode work featured on QUANTUM, and the ANIC and biological control of Paterson's Curse featured on Gardening Australia.

Sandy Smith is now the communications officer in the division. Rosie Schmedding has joined us as a journalist.

Marina Tyndale-Biscoe is about to undertake a project on the lesser mealworm beetle, *Alphitobius diaperinus*, as a biological control agent for flies breeding in poultry manure. At a local egg farm, this beetle has been controlling flies and converting the wet manure into dry powder for some time. The project is aimed at identifying the conditions on that farm that allow such effective action of the beetles, so that other egg producers can benefit.

Roger Farrow has been mostly away, as usual. This quarter, he went to Montpellier, France to participate in a review of PRIFAF, a French locust organisation working in Africa. A trip to Japan followed in September, where he presented a keynote address on migration strategies of insect pests of agriculture at a conference on that theme. Then he participated in a conference at Albury (Australia!) on the role of trees in sustainable agriculture.

Hugh Dingle has joined Roger Farrow for a sabbatical from the University of California, Davis. His primary purpose here is to write a book on the biology of migration, and to that end is visiting various workers around the country. He is also enjoying the bird watching mightily, I'm told.

Geoff Baker from the Adelaide lab, visited Canberra in September and regaled us with a seminar on the ecology of earthworms in south-eastern Australia.

Hot in pursuit of their aphid quarry, Wendy Milne, Roger Delves, Dick Hughes and Anne Hughes have been covering a lot of distance in rural NSW over the last few months.

Tony Watson and Hilda Abbey are back at termites full-time, now that the dragonfly book has appeared. Tony and Sil Runko spent some time recently in Sydney looking for field sites, and are planning another trip in November to WA with Vance Brown for more site hunting. Mr Zhong Jun-hong from the Guangdong Entomological Institute has joined the termite group for three months to work on antibiotics and fungal attractants for use in termite control. Mr Wang Yi-an, from Hangzhou, spent a month in the lab recently testing baits used in China, for their potential against termites in Australia.

Keith Binnington reports that he hasn't been doing anything exciting in the last quarter, just working away on the adherence factors that determine whether entomopathogenic bacteria can colonise the guts of scarab larvae. The goal is to identify strains of *Serratia* that will control Australian scarabs. Sounds pretty exciting to me.

David Evans is now a member of the Marketing and Services Committee of the GRDC, and reports that he is happy to advise any would-be applicants for support for projects on stored grain hygiene, pest control and the like. The majority of the field research on grains and legumes will be considered by the Farming Systems Committee, chaired by Time Reeves of DARA. Wearing his other hat, that of horticultural research co-ordination for the Division, David Evans has been active in developing a project to evaluate the combined use of pesticides and pheromones for mating

disruption in codling moth. Pesticides will be used against the first generation only, to augment the impact of mating disruption, which may not in itself be sufficient to achieve the very low levels of fruit damage required by the industry. The apple and pear industry has declared an intention to reduce the use of pesticides by 50% by 1995/96 and, with increasing signs of codling moth resistance to azinphos-methyl, they are getting serious about capitalising on non-chemical methods of control.

Richard Milner spent all of August in Myanmar (Burma) and Malaysia. In Myanmar he was acting as FAO consultant on the use of the entomogenous fungus, *Metarhizium*, for control of scarabs in groundnut (peanut) crops. In Malaysia, he attended the conference on biological control in tropical agriculture, (also attended by Paul Wellings and Doug Waterhouse). After the conference, Paul Wellings went on to Europe, to Wageningen, Rothamstead, Silwood Park and Montpellier, the latter for more Russian wheat aphid work.

The new stored grain lab extension is finished and being colonised, resulting in a general office reshuffle. Tal Ghaly is the first of the Melbourne engineering group to have moved up to Canberra. Welcome Tal. Bill McGaughey, research leader of the biological research unit in the USDA grain lab in Kansas, visited SGRL for a day of discussions and presented a seminar. Barry Longstaff and Bruce Champ, in the company of Graham White (QDPI), travelled to China on an ACIAR-funded trip to assess the feasibility of a project to develop a decision-support system for usage of grain protectants. In spite of all the bicycles in China, Barry sorely missed his own, and after 2 weeks of banquets came home 5 kg heavier.

Australian Plague Locust Commission

Paul Walker, who has just been awarded his PhD from Queensland University, has joined the group from BSES in Bundaberg. Paul is working on the Environmental Project with Genevieve Carruthers. They are about to embark on the second round of spray trials while desperately trying to identify the arthropods collected so far - their thanks to CSIRO in this regard. Laury McCulloch recently returned to the fold following a 2 year stint with FAO in Rome. Laury's greatest challenge at the moment is to salvage what remains of his garden after 2 years of neglect.

It is proving to be a busy spring for the Commission as many of the staff have been involved in control campaigns in the Coonamble and Narrabri areas. Media claims of "the worst locust plague since Exodus" are slightly exaggerated, but even so, things will be busy well into November.

Jane WRIGHT
Regional Councillor

ANIC and ANU

Ian Naumann and Jo Cardale have completed the final editing of The Insects of Australia and the first complete copy arrived in the ANIC on 3 October! The official launch of "The Book" is scheduled for 8 November in Canberra to coincide with the Symposium and Workshop on Biological Collections.

Shortly after sending the last proofs to Melbourne University Press, Ian and Jo, together with Jo Berry, left Canberra and headed for The Natural History Museum. They all attended the International Hymenopterists Society meeting in Sheffield before returning home. Ian took the most indirect path back from London, stopping in Ottawa, Canada to work on a new family of New Zealand Hymenoptera with Dr Masner and then on to La Plata, Argentina to work with Dr Marta S. Loiacono on wasps.

Hymenopterists weren't alone in heading north for the spring. Dipterist Pete Cranston attended the International Symposium on Chironomidae in Amsterdam followed by a stop at The Natural History Museum; Collembologist Penny Greenslade visited colleagues in Czechoslovakia, Switzerland, Portugal, France and England; and Coccidologist Penny Gullan travelled to the Paris Museum and The Natural History Museum. Meanwhile, Ebbe Nielsen was maintaining his globe-trotting habits with visits to London, Copenhagen (for a joint research project and lecturing) and Chicago (to consult with the staff in the office of the Chairman of the IUCN Species Survival Commission). To show that he could travel just as well domestically, on his return from overseas Ebbe was off to Perth and Albany for the annual meeting of the Council of Australian Museum Directors and then on to Cairns to meet with Ian Cunningham and Geoff Monteith to plan the entomological component of the Cape York Peninsula Land Use Study. The coleopterists have also been on the move, with John Lawrence, Tom Weir and Walter Dressler spending two weeks collecting in the Brookfield Conservation Park, South Australia. John Lawrence has since left on a beetle-hunting

expedition to New Zealand. And not to be left out, David Rentz has headed for Darwin to inspect assorted Orthoptera collections.

Students in the Division of Botany and Zoology at ANU have been sharing their recent discoveries with colleagues both in Australia and overseas. John Truman attended the XIth International Symposium of Odonatology in Trievi, Italy and presented two papers, one on a cladistic analysis of odonate wing venation and the other on the morphology of dragonfly eggs. Ting Kui Qin travelled to Sydney to share his recent findings on *Ceroplastes* taxonomy at the First Annual Conference of the Australian Society of Horticultural Science, at Macquarie University. All talks were well received, especially John's results concerning the phylogenetic placement of *Hemiphlebia*.

Some new faces have recently arrived on the scene. Lyn Cook, in the ANU Division of Botany and Zoology, is an honours student with Penny Gullan and should produce some interesting results as she investigates gall induction in *Apiomorpha* (Eriococcidae). To help the hymenopterists get back on their feet, Alison Roach has given up dermestids (at least for now) and taken a position assisting with curation in ANIC. She is helping the Hymenoptera section catch up on the backlog of material which accumulated during the final stages of "The Book". The databasing group in the ANIC has expanded with the addition of Audra Ankers to assist Tracey Harwood and Penny Andrews. They are now in full operation (computers and software have arrived and the database is set up and functioning). The first groups to receive attention, the Megaloptera, termites, Christmas beetles and selected Orthopotera, are well on their way with more than 3000 records processed. The main obstacle encountered so far is translating specimen labels into the longitude and latitude coordinates needed for analysis. In one case, a specimen was recorded as being collected 50 miles north of Townsville. This puts it in the Coral Sea some 30km from the nearest land. If only the original collector had used longitude and latitude in the first place, it would save all of us a lot of work later one. Mary Carver's funding from RIRDC has finally materialised and Helen Beens and Megan Edwards have been appointed to assist with assembling the database, which will collate information on the biology, host relations, distribution and economic importance of aphids and their insect parasites, predators and mutualists.

Now that the Insects of Australia tome is out of the way, Ian Naumann has begun working on an updated edition of the Common Names of Australian Insects. He will be assisted by Judith Olditch and they hope to have the new version completed by the end of 1992. Other books recently completed include The Australian Dragonflies by J.A.L. Watson, G. Theischinger and H.M. Abbey, and the first volume of Zimmerman's Australian Weevils. To assist with future volumes of the Zoological Catalogue and other publications, Ebbe Nielsen has been appointed to the ABRS Fauna Editorial Committee.

The electronic media has also shown an interest in the activities of the Division recently, with Quantum featuring the Nematology group and Gardening Australia filming in the ANIC. Alison Roach featured prominently in the latter, as the film crew took a special interest in her dermestid beetles and their genitalia. Other visitors taking an interest in the collection, although for more scientific reasons, include Alan Andersen (CSIRO, Darwin) who had a look at the ants with Steve Shattuck, and Yayuk R. Suhardjono, an Indonesian researcher studying Collembola with Penny Greenslade.

Steven SHATTUCK
Regional Councillor

NORTHERN TERRITORY

NT Health — Medical Entomology Branch

Peter Whelan has recently returned from Dili in East Timor at the invitation of the Mayor of Dili for departmental assistance with local mosquito problems. It was very dry during the visit with the predominant problem being *Culex quinquefasciatus* arising from urban drains.

David Logan has been busy conducting in-depth investigations into the Darwin blowfly situation. He is currently assessing two trapping methods and conducting an assessment of garbage packaging and the "wheelie-bin" production of blowflies. Wendy Kelton is progressing on taxonomy queries and maintaining the reference collection and mosquito monitoring data.

Gwenda Hayes and Peter Whelan investigated a mosquito problem in Alice Springs during September and found plagues of *Culex quinquefasciatus* originating from a large swamp of sewerage effluent. Gwenda is now busy trying to sort out anomalies between the larval and adult collections of *Culex quinquefasciatus* and *Culex australicus*.

Paul Donaldson has been conducting the mosquito control program and has become proficient at helicopter jumping and 4- wheel swamp-bike surveying.

NT Museum

Contrary to indications from the lack of news in the last *Myrmecia*, the NT Museum Entomology Department still exists — Alice Wells fled to the AGM and the CHAEC meeting in Melbourne as the last news was due. She spoke at the meeting about the discovery of the first parasitoid caddisfly. Whilst in Melbourne, Alice visited the Museum of Victoria for several days to work on a group of caddisflies, and to meet Arturs Neboiss and David Cartwright. Subsequently, in Adelaide, Alice spent some time at the Waite Institute, learning some of the ins and outs of keys to Hymenoptera families from Andy Austin and Paul Dangerfield.

Regular field trips to Kakadu NP and Berry Springs have continued and the seasonal changes keep bringing surprises. In Darwin one of the late dry season surprises has been the large number of male mouse spiders wandering in suburban houses and gardens!

The Museum welcomed the DPI&F decision to transfer much of its insect collection to the Museum. The material is now stored alongside the Museum collection, and the task of re-organising the whole collection to incorporate the DPI&F material has begun.

A number of people have dropped into the Museum recently, most of them limnologists. Bert Orr checked the nymphuline collection when on route between Queensland and Brunei.

Office of the Supervising Scientist — Alligator Rivers Region Research Institute

Gary Ankley from the US EPA Duluth Environmental Labs visited Greg Rippon to discuss deriving sediment quality criteria from sediment toxicity tests. Greg was successful in his application for the research scientist position, and will have major responsibility for the running of the streamside monitoring program.

CSIRO "Salvinia Scientist" (to quote the NT News) Michael Storrs is here working on a multiple-funded project to examine the performance of the biocontrol weevil *Cyrtobagous salviniae*. So far, it has surprised causal onlookers with its lack of successful control of the dreaded weed on the Magela floodplain. Casual on-lookers might also have been surprised by Michael's efforts at impromptu water-skiing in Ja-Ja billabong.

Peter Dostine escorted limnologist Andrew Boulton (Zoology — Adelaide University) and student Rachel Paltridge on an expedition to reveal the secrets of the hyporheic fauna of the upper Magela Creek. Andrew survived to deliver a seminar on "Aspects of the ecology of temporary temperate streams". Rachel has commenced an Honours project on the sources of colonisation of benthic organisms in the temporary reach of Magela Creek.

DPIF — Entomology Section

Thrips palmi has continued to dominate the section's activities (see *Myrmecia* vol. 27, pt 3), with Western Australia imposing severe restrictions on plants and produce from the Top End. This has required constant monitoring of many growers' properties and also of various nurseries. While over the past two years *T. palmi* has merely consolidated its position within the general area in which it was first identified, it spread some 16km eastwards to the Coastal Plains Research Station adjacent to the Adelaide River during September.

Much of the monitoring has been done with blue water-tray traps which, in the dry season at least, are proving more effective than sticky traps.

A working party has been set up consisting of Departmental staff and representatives of growers and nurserymen to co- ordinate the *Thrips palmi* work.

A recommendation that the Section transfer all the non-economic species from its collection at Berrimah to the NT Museum was accepted, and the work of transfering this material has kept Murray Upton more than busy when not occupied identifying *Thrips*. It is interesting to note that the insect collection was originally the collection of the NT Museums Branch of the old NT Administration and was mainly built up in the 1960's and early 70's when there were taxonomic entomologists on the staff and primary industries were only in their infancy.

Information regarding the economic insects of the NT is now going to be computerised, eventually allowing for rapid retrieval of relevant data on crop pests.

The month of September saw an incredible invasion of *Graptostethus* sp. bugs at the Mango Farm and the Daly River. The weight of bugs being so great that palm fronds

and small mango tree branches were broken off. Bugs of the same genus were also recorded swarming on, and causing serious damage to, banana branches at Middle Arm.

At the time of writing Stuart Smith has just returned from PNG and Murray Upton is trying to finalise his work before returning south. Jaye Layland was pleased to welcome Haidee Brown back into the thrips fold after 10 weeks leave, and Suzanne Gall has switched from cashew pests to join Elliot Crowson in thrips monitoring, Chris Ford not having found thrips to his liking.

Deanna Chin is gearing up for some more hot water dipping of mangoes to test the market. She has also been kept busy attending to the constant stream of extension enquiries from growers - many of whom seem to have found mites becoming a problem of late.

The section is eagerly awaiting the arrival of a new technician to help with the increasing overload that entomology is facing in the Top End.

DPIF — Quarantine and Inspection

Hermes Perona has resigned his position as NAQS Plant Science Officer to pursue further studies in entomology. Ted Fenner visited Kununurra for a few days in September for discussions on interstate quarantine and northern surveillance.

DPIF — Weeds Section

All's quiet on the weeds front, apart from visits by Wendy Forno for discussions on the *Mimosa* program, and from Mic Julien for discussions on *Salvinia*.

CSIRO — Division of Entomology

The big news at the moment is that permission has been granted to release the seed feeding weevil *Apion aculeatum* for the biological control of *Mimosa pigra*, so the next few months will see a juggling of research priorities as the weevil is introduced. Visits to TERC (Tropical Ecosystems Research Centre) by Wendy Forno are a regular occurrence, but the foundations of the Pye lab shuddered (and it survived cyclone Tracey) when both Wendy and Jim Cullen visited the centre in August. Jim was up to PPE honorary entomologist Mark Lonsdale, (for non-CSIRO people, you don't want to know what PPE is), and in the process managed to talk a little weed biocontrol with Mark and Grant Farrell. Wendy, on route to Thailand and Malaysia to wave the mimosa biocontrol flag, attended meetings at TERC and DPI&F to discuss ongoing weed control programs and to make arrangements for an international workshop on control of mimosa to be held in Darwin next year. Buoyed by the high powered visit (or was that cowed into submission), Mark and Grant disappeared into their offices for a month to churn out first drafts of their respective chapters of the handbook that will be produced for the workshop.

Work on a sampling program for *Neurostrota gunniella* continues and has been aided by the volunteer assistance of Jason Major, a former La Trobe honours student. Jason has been so efficient in the lab and field that Grant has been flat out trying to keep one step ahead of him with the sampling program. Annie Lane is taking a well earned rest from Darwin, but it is rumoured that while in Brisbane she will visit Long Pocket to see just what it is that Wendy and Co. get up to. Annie, before leaving for Brisbane, finished processing last wet season's seed rain data for mimosa and when the data is analysed we will have our first concrete information on the effectiveness of *Neurostrota* on mimosa.

CSIRO — Division of Wildlife and Ecology

The exploits of Alan Andersen are as usual many and varied. He has just returned from the Conservation Biology conference in Brisbane where he gave a paper "Ants as indicators of restoration success at Ranger Uranium Mine". Starting in mid October Alan will be working with CSIRO's mine site rehabilitation research group, using ants as indicators of restoration success at Nabalco's bauxite mine at Gove. Also in mid October he will be attending a conference in Canberra, Environment 2000, where he will chair a workshop on biodiversity. And if that's not enough, he will soon be off to Brunei to assist one of Bob May's (Oxford) graduate students working on rainforest ant communities.

Peter DOSTINE
Regional Councillor

WESTERN AUSTRALIA

Department of Agriculture

Rob Emery and Andras Szito have started a State-wide survey of phosphine resistance in grain insects. The survey is sponsored by the Wheat Research Committee of Western Australia and samples of grain insects will be collected from 50% of the State's grain producing properties which are larger than 500 ha. Rob hopes to establish a resistance management plan which will be used to limit the development and spread of phosphine resistant strains of grain insects.

Stewart Learmonth attended the first conference by the Australian Society of Horticultural Science at Macquarie University in early October. The theme was "Clean and Green in the 90's" and Stewart presented a paper on the management of the white fringed weevil in potatoes.

Agriculture Protection Board

The European wasp programme over the last two years seems to have been a success. No nests have been found so far this year after having destroyed 21 nests last year and 140 the year before. Several queens have been found, all in goods imported from the Eastern States. Thanks to the awareness of the public these were reported and destroyed. Ross Field, who visited the APB, was somewhat less optimistic and said that this decline in numbers could well be due to climatic factors and was not uncommon. Ross gave a talk on European wasps and their control in the Eastern States. Ross also looked at lycaenids in nests of *Camponotus*.

John van Schagen and Shirani Wijesuriya spent 5 days in and around Broome, on a National Australian Quarantine Strategy survey. NAQS is conducting a survey along the entire northern coastline of Australia in order to locate any exotic insects or weeds that may have been introduced. Illegal fishermen and immigrants from south-east Asian origin are a potential source of foreign pests. Apart from looking at introduced pests we also looked at some of the local pest species. The biggest problem is that *Mastotermes darwiniensis* causes a lot of damage to horticultural crops. This termite attacks live trees such as mango, cashew and citrus as well as a variety of vegetables which often die as a result.

WA Museum

After a visit from Gerry Cassis, who sorted through the mirid collection, Terry Houston left for South Africa to look at some bigger game rather than insects. He did however manage to meet some colleagues in Pretoria, Cape Town and Grahamstown. As soon as he came back, Terry organised the WA Insect Study Society display at the Kings Park Wildflower Festival. The theme of the display was the role of insects in pollination. The many specimens of butterflies, wasps and jewel beetles caught the attention of many people visiting the show. A common question was whether the beetles were plastic and if they had been painted.

University of Western Australia

A couple of MSc degrees were awarded to Sarute Sudhi-Aromna for completing a study on sex ratio control in the parasitoid *Cotesia glomerata* and Mark Heap for his study on management strategies for the lucerne corn borer *Zygrita diva* in the Ord. Sarute is now back in Thailand and Mark has been an Entomologist with the Department of Agriculture in Mount Gambier, South Australia for some years. The Zoology Department has been host to two Canadians, Drs Ron Aiken of Mount Allison University and Darryl Gwynne from the University of Toronto. Ron is spending his sabbatical in Perth and, although interested in mating behaviour of corixids, has a second interest in hermaphroditism of sea slugs. Darryl was here collaborating with Dr Leigh Simmons on a project looking at the relative mating efforts of each sex in an undescribed tettigoniid in Kings Park. Dr Todd Shelly has taken a position in the Evolutionary Biology Group at the University of Hawaii working on his beloved fruit flies. His post-doctoral position may be taken up by Dr Geoff Allen, now at Riverside, California, in the new year.

Curtin University of Technology

The past few weeks have been characterised by more absences than presences. Tony Postle went on a bush-walking/insect collecting trip to Fitzroy Crossing. Prior to his return to Perth he called in at the Argyle Diamond mine to continue his insect monitoring programme.

Jonathan Majer visited Macquarie University in August to take part in a working group which was advising the government's Biological Diversity Advisory Committee. On his return, he and student Anne Scougall attended the

Australian Society of Soil Science conference at Albany, where they presented a paper on the impact of livestock grazing in remnants of native vegetation on soil, plants and soil animals. After a one week recovery period they attended the Tammin conference on "Reconstruction of Fragmented Ecosystems: Global and Regional Perspectives" and presented a paper on the influence of livestock-induced changes to soil, plants and soil animals on revegetation attempts in the WA wheatbelt.

Following the Tammin conference, Harry Recher (UNE) visited Curtin to discuss with Jonathan their ongoing joint research on plant-insect-bird interactions. This topic, and also the monitoring of invertebrates, had previously been discussed with John Hutcheson who was visiting from the Forest Research Institute (NZ).

Murdoch University

Two students recently started Honours projects, namely John Arena who is working on immunological studies of arthropod predation and Tim Quinlan who is studying resource partitioning in sympatric scorpions.

CALM Wildlife Research

Brett Scourse took over from Graham Hall in July on the WWF funded invertebrate/fire research in the Stirling Ranges National Park. Sorting and collation of samples is 'on track' and analyses are underway. Two further pitfall grids have been established in the Stirlings within a large area burnt under high intensity wildfire conditions last March. This will enable useful comparisons with the small scale low intensity experimental burns carried out on the other plots.

CSIRO

The Entomology Division had a visit from Max Whitten, the chief of the Division, and also from Brian Fletcher to discuss their research programmes. They also had a visit from the Minister for Science and a Chinese attaché as they were touring the Floreat Park complex. John Matthiessen has returned from America where he presented a review of work on soil insect pests of potatoes in Australasia at a conference held in Wyoming.

A very successful National Workshop on red-legged earth mites, lucerne fleas and blue oat mites was held in Perth in September. This was jointly organised by CSIRO and the WA Department of Agriculture and funded by the Research Development Corporations concerned with pastures. Nearly 40 participants came from all southern States of Australia and from New Zealand. Research carried out on these pests was reviewed and future priorities for their control were discussed.

Health Department

The Health Department published an Atlas of the Mosquitoes of Western Australia, by Peter Liehne. It treats the 90 species of mosquitoes recorded from Western Australia. The first section of the atlas deals with the general aspects of mosquito biology and reviews the main diseases and pest problems in WA, the second section deals with mosquito management and the third deals with mosquito taxonomy. It contains keys to species, descriptions, distributions, notes on biology, pest and vector status. It has 284 pp and costs $40 for a hardcover and $20 for a softcover.

John Van SCHAGEN
Regional Councillor

SOUTH AUSTRALIA

Crop Protection Department (Entomology Group) Waite Institute

Mike Keller has launched two new videos on insect behaviour, which he produced with the assistance of the University's Advisory Centre on University Education. They are entitled 'Courtship and Sexual Selection in Insects' and 'Search & Destroy: Behavioural Interactions Between Parasitic Wasps and Their Hosts'.

Zhongkui Peng has been awarded his PhD for his thesis on the 'Feeding determinants of aphids, with special reference to the rose aphid, *Macrosiphum rosae*' while Jorg Kitt has recently commenced a PhD with Derek Maelzer on the same aphid.

Dudley Pinnock, David Cooper, Jane Drummond and Ed Lyness all travelled to Canberra in September to present updates on their research projects at the workshop on *Bacillus thuringiensis*.

Andy Austin and Paul Dangerfield have been undertaking field work over the last few weeks, looking for insects associated with twig and branch galls on *Banksia*, especially the rare endemic braconid genus *Mesostoa*.

There is much planning and disruption in the

Department at the moment; planning because of the move of the Department of Agriculture to the Waite Institute campus, and disruption because of the building work going on on the floor below because of the refurbishment of the plant molecular biology labs.

Department of Agriculture

Plans for the co-location of the Department of Entomology and Waite Institute entomologists are progressing to the haggling stage for laboratory space. Thanks to airline deregulation staff have attended a record number of conferences. Dennis Hopkins and Peter Taverner attended a Wool Corp.-sponsored workshop on red- legged earthmite, held in Perth, and they took the opportunity to catch up with happenings among entomologists at South Perth. Greg Baker joined the saffron-robe and begging bowl set, attending an orchard pest management workshop in Melbourne, a CSIRO sponsored workshop on *Bacillus thuringiensis* in Canberra and the Horticulture 'Clean & Green' conference in Sydney.

University of South Australia (Mosquito Research Group)

Alan Mead has returned from his visit to Jurek Kolasa in Canada with the news that several of the *Mesostoma* (Turbellaria) species that he and Grant Fleming have in culture as potential biological control organisms for small environment mosquitoes (e.g. *Aedes aegypti*), are new to science. Consequently they have the job of describing them as well as undertaking their biological studies.

Phil Weinstein (SA Health Commission) inspected our mosquito laboratories and recommended some changes before they could be granted quarantine status. One was to paint the outer corridor black. Entering the Lab these days is like going to a sleazy night club!

Mike Kokkinn has been flat out investigating the effects of hatching temperature on subsequent growth of larval mosquitoes. After a visit to Mike Keller (Waite Institute) to see his wind tunnel, Lawrie Bennett and Mike K. are hard at work on the design of an olfactometer.

Mike Kokkinn goes on study leave to Africa next year to learn about malaria control methods there. Before then, he is going across to visit Dr Tony Sweeney at the Army Malaria Research Unit at Ingleburn (NSW).

Department of Zoology (Adelaide University)

James Wallman, an honour's graduate from this Department in 1990 has enrolled for a higher degree. His project will be on the taxonomy and ecology of larval carrion-breeding Calliphoridae from South Australia.

SA Health Commission

During the first half of 1991, there was a prolonged outbreak of serious conjunctivitis in Central Australia, mainly in Aboriginal communities. The bushfly *Musca vetustissima* was blamed for carrying *Neisseria gonorrhoeae* (the bacterium that causes gonorrhoea) from eye to eye, and possibly from genitals to eye. These flies are particularly attracted to the face, eyes, sores and abscesses, and will feed from these sites during the heat of the day. They breed in human and animal excrement, and it is possible to limit breeding sites by covering excrement and moving stock further from settlements. However, because *Neisseria gonorrhoeae* is a fragile organism that dies rapidly in the absence of host secretions, and because it is likely to be only an accidental passenger on flies, poor personal hygiene in close living quarters was considered to play a more significant role in transmission.

'A guide to headlice and their management' by Chris Hardwicke and Phil Weinstein will soon be available for distribution. The guide outlines how to deal with infestations on the basis of the natural history of the louse, and describes what to do about resistance to pediculicides. Copies can be requested on (08) 226 6352, or by writing to the SAHC, PO Box 6, Rundle Mall, Adelaide, 5000.

CSIRO Divisions of Entomology and Soils

James Coupland (CSIRO, Montpellier, France) reports he is finding several potential biological control agents of white snails in eastern Europe. He recently sent more sciomyzids through to Adelaide for quarantine rearing and host specificity testing by Dennis Hopkins (SADA). Recent interstate visitors to CSIRO Adelaide laboratories have included Beverley van Praagh, Dennis Black, Max Whitten, Pauline Mele, Geoff Dyne, Richard Hindell and John Allwright.

Andy AUSTIN
Regional Councillor

QUEENSLAND

SOUTH EAST QUEENSLAND

Health Department

Pipi Mottram and David Sinclair from Cairns, together with other staff from the Vector Control section will be running a mosquito control and identification course in November for 22 officers at Amberley Air Base as requested by the Royal Australian Air Force.

Queensland Institute of Medical Research

Brian Kay has just returned from a trip to the Philippines, Thailand and Indonesia for the International Rice Research Institute to review programmes. During the period 15th-19th October, the QIMR hosted a number of seminar programmes and a major international symposium - "Frontiers of Medical Science". Celebrations culminated in the official opening of their new home, the Bancroft Centre, by the Premier of Queensland the Hon. Wayne Goss followed by an open day which incorporated a public forum on melanoma and bowel cancer.

Brian Kay convened a programme — "Vector Control in the 90's" — on the 15th October which was opened by Prof Hugh Paterson and included Joan Bryan, Brian Kay, Lynda Muir, Michael Brown, Pat Dale and M. Nakamura as speakers. They covered the topics of malaria control, dengue surveillance and control, biological control, environmental management and modification and a new chemical for public health usage. Harry Standfast gave the closing statement and vote of thanks.

University of Queensland

Hugh Paterson was an invited speaker at an international conference on evolution held in Cardiff during September. Others attending included Steven Gould, Guy Bush and Tom Wood, an expert on speciation of the Membracidae. Hugh says that the Chair of Entomology has been advertised with a closing date for application on the 15th of November.

Visitors to the Department included Prof B.C. Clarke (FRS) from the Genetics Department of Nottingham University, Prof Dan Simberloff from the Department of Biological Sciences at Florida State University, Tallahassee and David Yeates from the American Museum of Natural History who was taking time off from his postdoc. Finally, congratulations are in order to Paul Walker for being awarded his PhD on pinkspotted bollworm dispersal.

CSIRO, Long Pocket

Don Sands visited countries in the Pacific region in the first half of October to assess programs in several biological control projects directed by CSIRO and funded by ACIAR. In Western Samoa, he found a rejuvenating passionfruit industry following the recent successful control of white peach scale, which earlier had caused almost total destruction of the vines. Damage by the fruit-piercing moth, *Othreis fullonia*, is minimal there and populations of adults and larvae are declining following establishment of the PNG egg parasitoid *Telenomus* sp. in 1990. Moth populations remain high in nearby American Samoa where the parasitoid is not present. In Fiji another PNG egg parasitoid, *Boencyrtus* sp., has established and is causing heavy mortality in *O. fullonia* eggs. Neither species of parasitoid is present in Tonga, where the moths are causing severe damage to the export capsicum industry. Wilco Liebregts is now stationed in Tonga to implement another ACIAR funded biological control effort against the moths.

Bob Sutherst attended a meeting of the North American Plant Protection Organisation in Washington DC from 21–25 October. The meeting was convened to consider the design of a global procedure for pest risk assessment, under the auspices of FAO.

Wendy Forno will be in Europe and Venezuela between 16 October and 21 November. In England she will be visiting Harry Evans, who is carrying out the host-specificity testing of the pathogens that are potential biocontrol agents of *Mimosa pigra*. While in Venezuela, Wendy will be exploring the native range of *M. pigra*, *Sida acuta* and *Hyptis suaveolens* of potential biocontrol agents.

Griffith University

Work continues on a number of projects on the biology and ecology of aquatic insects. Jon Marshall has been appointed curator of the aquatic insect collection in the Centre for Catchment and Instream Research for 12 months from April. The collection contains many voucher specimens collected throughout SE Qld and the Atherton Tablelands.

Stuart Bunn has recently received ARC funding for two 3 year projects on the ecology of aquatic insects. The first deals with the influence of disturbance on the life history strategies of stream insects. The second project with Jane Hughes is based in the Conondale Ranges and uses electrophoresis to estimate dispersal among populations within and between streams.

Stuart and Angela Arthington have recently finished a consultancy for the Qld Electricity Commission on a limnological study of the proposed Tully-Millstream hydroelectric scheme. Stuart is currently editing a 2 volume set of keys to adult and larval Australian Trichoptera as a Special Publication of the Australian Society of Limnology and hopes they will be finished before the end of the year. Meanwhile Brad Pusey and Angela Arthington are busy with their study of the effects of pesticides on insect communities in artificial stream channels set up at Atkinson Dam west of Brisbane.

Centre for Tropical Pest Management

The Centre is well and truly off and running. The first set of new core positions (post-docs, network managers, etc.) have been advertised. The Centre participants held a "strategic planning workshop" - this talk-fest started the long and sometimes arduous process of getting people to collaborate and work together. The Centre's board: Geoff Behncken, Merv Bengston, Ian Galloway, Hugh Paterson, Peter Sheehan, Geoff Wines, Max Whitten (Chair) and Myron Zalucki met on October 16th to decide who the "real" Director of the Centre will be. The offer has been made. More news next time around. Meantime Peter Room (Co-ordinator of the Insect Connections Program) is off overseas to check out developments in plant-insect modelling and establish links with other groups. Rob Sutherst (Co-ordinator of the Synthesis Program) is off to the States extolling the virtues of his CLIMEX program. Whilst Elaine Brough (Co-ordinator of the Applications and Implementation Program) is in the States seminaring and speaking on the AKIS approach to implementing pest management research results. In the meantime the stand-in Director (Myron) is off to the Ord to give an invited talk on future directions in insect pest management.

Queensland Museum

Dr Patricio Fidalgo has arrived from Tucuman, Argentina, to work for 12 months on Australian fairy wasps, better known as chalcidoid wasps of the Family Mymaridae. All are parasites of insect eggs and they include some of the smallest insects in the world. Their minute size, together with the fact that the riddle to many of their taxonomic problems lies in the interpretation of the confusing type specimens of A.A. Girault housed in the QM, means that his task is going to be quite a challenge.

The Museum's travelling exhibition "The Butterfly Man of Kuranda" continues on its course with Geoff Monteith and Heather Janetzki conducting teacher workshops, giving lectures and generally working the media in conjunction with openings in Atherton, Townsville, Bundaberg and Dalby as the tour has swung back south in recent months. In Bundaberg they scooped the pool with four radio interviews, two television news spots and photo spreads in both local papers. The display remains at the Dalby Art Gallery until January 6 and then opens at the Warwick Gallery on January 10. From there it moves to Brisbane to be a component of the Queensland Museum's major temporary display "Living With Insects: Friends and Foes" which runs from February 12 to March 15, 1992. This display is being developed as a cooperative venture between all the Institutions in Brisbane which have entomologists within their walls.

Robert Raven and his newly-appointed assistant Phil Lawless spent three weeks in North Queensland setting pitfall traps at more than 40 sites. These will be maintained over the coming year. On their return they hosted Mike Gray (spiders) and Glenn Hunt (oribatid mites) from the Australian Museum who spent a week working with the Queensland Museum collections.

Andrew Calder, from ANIC Canberra, is due to spend a week here in early December working with our click beetles while Pamela Lovis from the National Museum in Wellington, New Zealand arrives in late January on an eight week Churchill Travel Award to gain experience in museum techniques in the Lower Entomology Section. She is interested in educational activities with insects and expects to be involved with our display on "Living with Insects" and with the tour of the Dodd Collection.

Des FOLEY
Regional Councillor

QDPI Entomology Branch

Eight entomologists were recently promoted to the Principal Scientist level: Rod Elder (Rockhampton), Harry Fay (Mareeba), Bernie Franzmann (Toowoomba), Les Robertson (Emerald), John Rogers (Kingaroy), Geoff Waite (Nambour), and Graham White and Bob Teakle (Indooroopilly). Neil Heather (Indooroopilly) was also elevated from I–13 to I–15.

Many branch members were involved in planning meetings for the Centre for Tropical Pest Management in

October. It's a slow and sometimes painful process.

Greg Daglish and the stored products group at Indooroopilly hosted a visit by three stored grains specialists from the National Post-harvest Institute for Research and Extension, Philippines, during October. The visitors were participants in a co-operative project with QDPI on development of grain protectants, and the visit allowed discussions of the project and observation of QDPI laboratory methods.

Neil Gough and Russell Parker (Indooroopilly) and Dan Smith (Nambour) attended the first national conference "Sustainable management of pests, diseases and weeds; Australian horticulture — clean and green in the 90's" in Sydney in October.

Bob Teakle (Indooroopilly) attended the workshop on *Bacillus thuringiensis* in Canberra. Many new *Bt* products are about to come on the market. Bob says that precautions against resistance development to *Bt* could be crucial in the long term.

Rod Elder (Rockhampton), Dan Smith (Nambour) and Geoff Watson (Integrated Pest Management, Mundubbera) toured northern areas in October inspecting release sites of the oriental scale parasite on papaws and attending grower meetings on this topic and also citrus pest issues. The parasite continues to provide encouraging results.

Geoff Waite (Nambour) attended the avocado research review meeting at Bribie Island in August organised by the Horticulture Research and Development Corporation.

Brad Scholz (Toowoomba) was visited by James Altman (Loxton) and Dean Stahmann (who owns an enormous pecan plantation near Moree) to discuss control of lepidopterous pests with egg parasites.

Les Robertson (Emerald) reports that he is struggling to keep abreast of horticultural insect knowledge. The Emerald region in recent years has been planted with large areas of citrus, table grapes and melons in particular and these irrigated crops in the hot dry climate are attracting a somewhat different pest complex than seen elsewhere. The hot dry spring weather caused a rapid increase in numbers of Oriental red mite but thankfully *Stethorus* responded rapidly.

Dave Murray and Bernie Franzmann (Toowoomba) were visited by Solaiappan Jayaraj (Vice Chancellor of Tamil Nadu University, India) for discussions on heliothis and sorghum midge management. John Turner and Judy Grimshaw (Indooroopilly) hosted a meeting of AQIS entomologists from across Australia in mid October. Judy dashed off afterwards to another meeting in Mareeba reviewing the NAQS project. Judy tells this correspondent that she is going on leave in early December to explore coral cays and dive in warm waters and not look at any insects at all.

John Rogers (Kingaroy) has a significant involvement with the Centre for Tropical Pest Management. John's role is co-ordinator for the newly created Project Group "Biological Control of Arthropod Pests".

Hugh Brier (Kingaroy) reports that the leptocoris bug continues to invade houses in the Kingaroy area. Such invasions normally cease during winter but particular households continue to carry out barrow loads of bugs each day. Maybe the drought is the cause.

Neil Heather and Bob Corcoran (Indooroopilly) will visit Thailand and the Philippines in October to commence the ACIAR Postharvest Fruit Fly Disinfestation project using residue free technology of hot air including vapour heat. This is an extension of their Australian program over the past three years.

Bernardino Rosario from Mozambique is visiting QDPI entomology labs for a few months and will return home in early December.

Bureau of Sugar Experiment Stations

Peter Allsopp (Bundaberg) arrived back feeling relaxed after his study leave at the USDA Japanese beetle lab in Wooster, Ohio. This attitude was quickly dispelled by demands for grant reports, new project proposals and various other management 'waffle'. Sampling grubs on Ohioan golf courses was much more enjoyable than bashing through sugarcane.

Bernie FRANZMANN
Regional Councillor

NORTH QUEENSLAND NEWS

Ruth Huwer from Germany, has commenced work on a 3 year study of *Amblypelta* spp. in Mareeba. The work is towards a PhD at Giessen University in Germany and Ruth's supervisor there is Dr Heinz Schmutterer. Harry Fay is providing additional supervision for the project in Mareeba.

Manju and Raj Prasad, from Fiji visited Mareeba briefly in October. Both are currently undertaking degrees at James Cook University in Townsville, Manju's on biological studies of *Epilachna*.

It's Yow

This is the final announc
Research Conference, endo
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The Conference will consis
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KEYNOTE SPEAKERS INCLU

Conference Address: Professor Jan
Wageningen, The Netherlands

IPM: Dr Howard Wearing, DSIR, A
Zealand

Modelling and Forecasting: Dr Bob
CSIRO Entomology, Brisbane

Pest Damage Assessment: Professor
Imperial College, London, UK

Biological Control: Dr Jim Cullen,
Entomology, Canberra

Chemical Control: Mr Neil Forreste
Agriculture and Fisheries, Narrabri

Cultural Control: Professor David Pi
University, USA

For further information, please
Dr Wendy Milne, CSIRO Divis
GPO Box 1700, Canberra, AC

Note that Final Circulars and Registratio

r Last Chance !

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LUDE:

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Alexandra, New	Microbial Control: Professor Dudley Pinnock, Waite Institute, Adelaide
ob Sutherst,	Biotechnology and Molecular Biology: Dr John Oakeshott, CSIRO Division of Entomology
or Geoff Norton,	Pheromones: Dr Max Suckling, DSIR, Christchurch, New Zealand
, CSIRO	Pollination Biology: Mr Graham Kleinschmidt, University of Queensland, Lawes
ster, NSW ri	Applied Nematology: Dr John Curran, CSIRO Entomology, Canberra
Pimentel, Cornell	Closing Address: Dr Vic Edge, NSW Agriculture and Fisheries, Rydalmere

se contact:
vision of Entomology,
ACT 2601 Fax (06) 246 4000

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PEST CONTROL AND SUSTAINABLE AGRICULTURE

27 APRIL - 1 MAY 1992

AUSTRALIAN NATIONAL UNIVERSITY

CANBERRA

It's Your Last Chance !

This is the final announcement of the Fifth Australian Applied Entomological Research Conference, endorsed by the Standing Committee on Agriculture and organised by the CSIRO Division of Entomology.

The Conference will consist of a series of symposia, with invited and contributed papers, posters and workshops. There will also be sessions devoted to exhibitions of research and extension videos, and specialist computer software.

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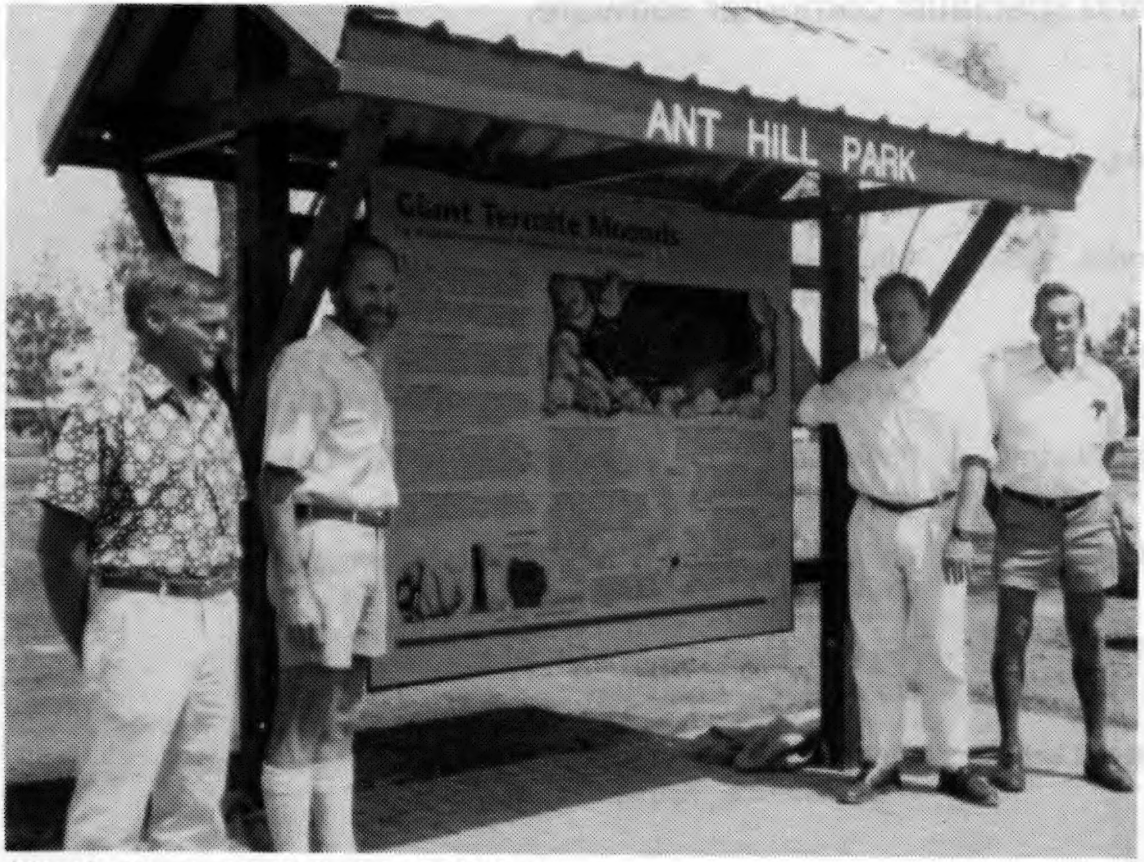
Note that Final Circulars and Registration Forms will be automatically circulated to First Circular respondents.

Dr Dave Larson from Newfoundland has finished his one year sabbatical in the Australian region. Studying dytiscid ecology the first half of his stay was based in Mareeba, the second in Madang PNG. No word has been received on how he or his family is coping with life back in the subarctic climes of Canada.

Mareeba now has its very own termite display. The giant mounds of *Nasutitermes triodiae* which dot the local landscape have long intrigued visitors and local DPI entomologist Ian Cunningham coordinated the Mareeba Shire Council, the Rotary Club and the Queensland Museum in developing a roadside display. Rotary working bees transplanted about six mounds into the town's Centennial Park. The Shire Council bitumened a tourist bus and car park nearby and built a shelter shed to house an information panel planned and designed by Geoff Monteith, Geoff Thompson and Paul Ramsden at the Queensland Museum. One of the points made in the information panel is that termites and true ants are very different creatures. Thus it was with some dismay that a gaggle of entomologists turned out for the grand opening by the Mareeba Shire Chairman on October 8 to find that the new park was officially inscribed "Ant Hill Park"!! It is not known yet how the termites will cope with the move but the experiment will be interesting.



At the opening of the new termite display in Mareeba were (from left) Mareeba DPI entomologist, Ian Cunningham, Queensland Museum's Geoff Monteith, Mareeba Shire Chairman, Chris Lewis, and Mareeba Rotary Club President, John Jennings.

Ross Storey spent several weeks in Canada, including a 3 day visit with Henry and Anne Howden in Ottawa. Ross and Henry did some work on a joint scarab paper, visited the local insect collections and had entertaining discussions with some local entomologists. A drive to legendary Meech Lake was a (?) highlight.

A meeting was held in the Mareeba DPI complex to gauge interest of local citrus growers in establishing an IPM program in the area. In attendance were Dan Smith (DPI, Nambour), Rod Elder (DPI, Rockhampton), Jeff Watson (Munduberra) and James Altman (Loxton, SA). James and Jeff are both involved with private pest scouting groups, and they provided information and opinion on the commercial viability of the concept in north Queensland.

Graham Wood (Herberton), Jack Hasenpusch (Garradunga) and Kelvyn Dunn (Victoria) are heading for the Iron Range area for 10 days pursuing beetles and butterflies. Another beetle enthusiast, Andrew Hay has moved to Cairns from Broome, WA. Andy will no doubt turn up a swag of interesting material as he has done in NWA.

Geoff Waite (Nambour, DPI) will be in Mareeba October 20. He will be looking at insect problems on lychee and also discussing *Amblypelta* work with Ruth Huwer and Harry Fay. Judy Grimshaw (Brisbane, DPI) attended a NAQS planning meeting October 18 in Mareeba.

NEW SOUTH WALES

SYDNEY METROPOLITAN NEWS

Australian Museum, Sydney

Dan Bickel will soon be off to the southwest of Australia to hunt for new and little known dipterans. David McAlpine continues to discover new families of flies. Shane McEvey attended the Hawaiian Evolution Conference at Hilo in late July and is involved with the NSW NPWS survey of the Clarence River Catchment area. Gerry Cassis has finished his two volumes on Heteroptera for the ABRS Catalogue. His recent fieldwork in northern NSW has resulted in the discovery of new species of earwigs to be included in his monograph on this group. Our trusty volunteer, Stephen Fellenberg, has recently been appointed to CERIT and will work there on insect culturing for insecticide research. Courtenay Smithers' book entitled Exploring Nature in Cities and Towns, won the Whitley Prize as part of the Best Children Naturalist's Series. Gunther Theischinger continues his never ending work on crane flies, the number of new species has climbed well above several hundred. Dan, Max and Gunther tackled the NSW Fly-Fisherman's Club, expertly coaching them on good bait. One member is taking an interest in mayfly taxonomy and we hope to hear further from him.

Many visitors have passed through over the last several months. Dr Dolly Lanfranco (Instituto de Silvicultural, Facultad de Ciencias, Forestales, Universitad Austral de Chile, fax 56 6321 2953) devoted a short week of her Australia-wide schedule to examine the Ichneumonidae, particularly the Labeninae, in the collection. A number of undescribed species of *Labium* were recognised by her among unsorted material. Tony Courtice (New Town, Tasmania) visited and talked with David about Tephritidae, and Shane about speciation and species complexes. Owen Griffith (Mauritius) dropped in to say hello to his old colleagues. Steve and Kathy Shattuck (ACT rep) spend a day looking at our *Iridomyrmex* ant species and chatted with us about networking. Neil Gough (DPI Indooroopilly) visited to check the southern distribution of the Orchid Beetle *Stethopachys formosa* (Baly). Peter McQuillan (Department Primary Industries, New Town, Tasmania) and Julie Virtue are working together preparing a small guidebook on Tasmanian butterflies. Julie's watercolors of about 40 species will go with Peter's text.

The Entomology section's computers are now linked to the outside world through the email address: shane@extro.ucc.su.oz.au.

Biological and Chemical Research Institute, Rydalmere

The last three months have been very busy at BCRI. Murray Fletcher attended the second meeting of the Council of the Heads of Australian Entomological Collections at the Museum of Victoria on 14 July, while Barry Wallbank also visited Melbourne for the meeting of the Australian Wheat Board's Working Party on Grain Protection.

Graeme Baker (locusts and grasshoppers), Graham Goodyer (pests of field crops) and Howard Greening (stored products insects) gave lectures to Agricultural Protection Diploma students from Charles Sturt University at Wagga Wagga, who visited BCRI on 16 July. John Macdonald from Wollongbar, Bruce Woods from Perth, Dan Papacek of Mundubbera and Dan Smith of Nambour all visited Eberhard

Schicha for a demonstration of identification of Australian and exotic mites of the family Phytoseiidae.

Narelle Sales was appointed as Senior Technical Officer in a Wool Research Development Fund project in the Animal Ectoparasite Laboratory, and Kevin Powis became a Technical Officer (Scientific) after having completed the course-work section of his traineeship. Martin Horwood took part in a seminar entitled "Termites — protect your building", held at the Masonic Centre, Sydney on August 14. Gary Levot, who has developed an expertise in forensic entomology over the past few years, identified maggots sampled from a body found in a deserted warehouse as Phoridae. Species of this family are commonly referred to as "coffin flies", as they are often associated with buried corpses.

Graham Brown spent three weeks during September on Lord Howe Island for a continuing investigation of insects damaging the flowers of Kentia palm. He left behind the Entomology Branch green with envy. With a beautiful location like that only Graham can dare call it "work"! Victor Rajakulendran visited Canberra from 24-26 September to attend a Workshop on *Bacillus thuringiensis* and Ronald Coilparampil commenced duty in the Entomology Branch as Technical Officer to assist with research into insect pests of vegetables. A group from Ryde School of Horticulture visited BCRI on October 21 and were addressed by Alan Westcott, Peter Gillespie and Grant Herron. Danuta Knihinicki who has been roaming around the castles and greener pastures of Europe for the last four months is due to return from her recreational leave on 28 October. Howard Greening who has been our entomologist specialising in stored product pests for over 27 years, and is well known throughout the wheat belt of New South Wales for his grain silos fumigation trials, is retiring. A farewell party will be held on November 7.

Forestry Commission

The Forestry Commission of NSW still awaits the outcome of a feasibility review towards full corporatisation, originally due in March, 1991. Will we be CALM or FCInc? In the mean time we are undergoing internal restructuring and few are calm.

Christine Stone has launched into a new season of eucalypt defoliating insects. The River Red Gum study of water stress versus insect herbivore remains a priority but other work includes the use of sustained release systemic insecticide granules in establishing farm trees and eucalypt plantations. As part of these programs, Chris Ann Urquhart has been almost buried by a mountain of leaves, frass and live leaf insects.

Bob Eldridge's MScAgr thesis "Studies on the Australian *Glyptotermes* (Isoptera: Kalotermitidae)" has been approved by the University of Sydney. Publication of a revision of the genus awaits a search for a colony of a new species, known only from a single alate collected by Ross Wylie, near Carnarvon Station, Qld. Bob has been trying to convince Ross to go back and finish the job!

Tony Watson and Sil Runko recently visited the Division and they and Bob Eldridge explored the Army's Holsworthy artillery firing range searching for a secure (you'll notice I didn't say safe) Sydney field trial site with plenty of the right termites. All survived and the result was quite promising.

David Spolc took advantage of the sirex quiet season for a whirlwind tour of parts of Europe. Even Dave admitted he found the pace he had set for himself a bit hard to keep up with (could have been all the time taken writing postcards). Before he left he confirmed sirex in a trap tree near Raymond Terrace (north of Newcastle). He is making several claims, including: first in *Pinus elliottii* for Australia; most northerly in Australia and first on the coast in NSW. A revised estimate of sirex arrival time in QLD is available on application.

Professor Dolly Lanfranco, Universidad Austral de Chile, visited the Division during September to discuss sirex management as part of a study tour of southeastern Australia.

Oscar Cruz, formerly of El Salvador, has joined the Biology Section for ten weeks work experience, Oscar is a participant in the Employment Preparation for Overseas Qualified Professionals course at the Institute of Languages, University of New South Wales. He is an agronomist with experience in entomology, including a study of leaf-hoppers in El Salvador and three years as curator (entomology), Museum of Natural History of El Salvador.

CERIT, the Centre for Entomological Research and Insecticide Technology, University of New South Wales

Though times are difficult, CERIT is functioning well and we have been lucky to be awarded two new research grants for the projects "Development of a laboratory culturing method for buffalo fly and the evaluation of new chemical control measures", from the Meat Research Corporation and

"Diagnostic techniques for early detection of resistance to oviposition suppressants of the Australian sheep blowfly *Lucilia cuprina*", from the Wool Research and Development Corporation.

Steven Fellenberg has been appointed to assist Martin Shivas with the latter of these projects. Steven was previously a lithographic planner and changed direction. He is presently enrolled in the Associate Diploma of Biological Techniques at Sydney College of TAFE.

Belinda Wilson is about to take maternity leave and her culturing load will have to be shared about. Mentioning culturing, CERIT has spent much time recently in setting up cultures of house dust mites and mosquitoes which can now be used in testing products.

Jenny Anderson has been promoting the NSW Agriculture flystrike prevention package "FLYWISE farmers beat flystrike" and has given lectures at the Conference on "Future of the Wool Industry", held at UNSW and at a meeting of the Pastoralists Association of the West Darling held at Mootwingee National Park. Lynette McLeod spoke at the latter meeting on the habits of *Lucilia cuprina*, especially overwintering and its inability to breed on carcasses. The carcass work was graphically illustrated and created much interest. By the way, the FLYWISE packet of 15 Agnotes can be purchased through CERIT or from NSW Agriculture, Goulburn for $4 and the video LOCKING out LUCY for $20 from CERIT.

Chris Virgona attended the International Conference on Neurochemistry at Darling Harbour in July and Keith Osborne (UNSW Biotechnology) is working in the CERIT insectory studying toxins to control mosquitoes. Several staff members have been embroiled in legal matters pertaining to insects and have been thoroughly "cheesed".

Visitors to CERIT include: Elkie Schurman and Jack Arundel, Wool Research and Development Corporation, Peter Wailes, Chief, Neil Galbraith, Deputy Chief, David McCulloch, Business Manager, Nickolaos Kariofoglou, Assistant Business Manager and George Holan, CSIRO Division of Chemicals and Polymers, Barry Brunsden, regulatory affairs consultant, Sydney, Dr Goetha Bai, Indian entomologist, now residing in Sydney, Alistair Campbell, Clemingers, Keith Chandler, Research Officer, Bureau of Sugar Experimental Stations, Queensland, John Boevink, Laboratory Manager, CIG, Tasmania, Peter Loneragan, Programme Support Manager, Meat Research Corporation, Steve McGuiness, Chemist, Samuel Taylor, Tony Trollope, Australian Manager, Rhone Merieux, and Ian Simpson, NSW Agriculture, Goulburn.

University of Technology, Sydney

Peter Miller and Bryce Peters are continuing their work on control of urban pests, particularly the introduction of insect growth regulators into normal control procedures. In June, 1991 they attended the conference on Ectoparasites of Pets (mainly dogs and cats) at the University of Kentucky, Lexington, Kentucky, USA. This was the inaugural conference in this field and provided an opportunity for veterinarians and entomologists to discuss the biology and control of fleas, ticks and mites. The conference was attended by about 150 delegates and universities, research institutions and industry were all represented. It was deemed a success and a further conference is planned for 1993. After the conference they visited a number of industrial research establishments in the USA involved in the control of urban pests.

Army Malaria Research Unit

During August Tony Sweeny and Liz Brooke attended the annual meeting of the Society for Invertebrate Pathology in Flagstaff, Arizona, USA. Following the meeting Tony visited Dr Jimmy Becnel at USDA, Gainesville, Florida and Dr Don Roberts at Cornell, Ithaca, New York. Liz spent a week in San Diego, where she visited the laboratories of Mycogen Corporation.

In October, Bob Cooper and Tony Sweeny visited CSIRO, Canberra to discuss the *Anopheles farauti* complex with Dr Rod Mahon, and suitable mosquito species for Peter Atkinson's genetic transformation work.

Steve Frances will be leaving the unit in January to work at the Department of Entomology, AFRIMS in Bangkok, Thailand. He will spend two years working in Thailand, and hopes to continue working in the area of personal protection measures for medically important arthropods. In September three scientists from Vietnam spent a week at the unit to view our current studies.

Macquarie University, School of Biological Sciences

Andy Beattie has been here, there and everywhere, on fieldwork, at conferences and giving talks (apart from other exciting events, such as the Vice Chancellor's Weekend Conference in the Blue Mountains). For example, he spoke

to the Australian Mining Industry Council in Perth, on Biodiversity and New Biological Resources", and to the Department of Infectious Diseases at the University of Sydney, on "Ants and other Bioresources". He and most of his lab attended the Conservation Biology Conference at the University of Queensland; Andy spoke on "Biology and New Bioresources", Ian Oliver on "The Rapid Assessment of Biodiversity", and Rod Peakall on "The Implications of Pollinator Behaviour for Conservation". Tragically, on the way to the conference, PhD student Ross Talent was killed in a car accident. Ross had been a Macquarie undergraduate, co-majoring in mathematics and biology. After obtained first class Honours in mathematics, Ross returned to biology for his PhD, where he was applying his brilliant mathematical ability to developing a system of modelling tools for conservation biologists based on finite-state continuous-time Markov chains. Ross was generous with his time in developing methods for data analysis for other members of the School. We find it hard to accept the loss of a young life and the curtailment of what was certain to have been an outstanding scientific career.

Hall Cushman, of Andy's laboratory, has been awarded a postdoctoral fellowship with Paul Ehrlich at the Conservation Biology Centre at Stanford University. Congratulations!

Dick Frankham also attended the Conservation Biology meeting in Brisbane, and presented a talk and five! posters. The lettering machine in the Art Room ran hot late into the night. Dick also gave a fascinating seminar to the RUBB group within the School on his use of *Drosophila* to model conservation genetics. As a result of all this conservation theory, there is a proposal for a future Macquarie course in conservation biology.

And among the aphids ... it seems that most people have been too busy with activities related to teaching to think very much about aphids, with Dinah Hales running the Biology of Insects course for about 30 internal and 30 external students, Eren Turak tutoring in Biology of Insects and first year biology, and Rita Holland, Dinah's honours student in first semester, nobly stepping into the breach to do the preparation for the practical classes, on a part time basis. (The breach is caused by the absence on long service leave of Senior Technical Officer Ray Cameron). Liz Holland is battling with aphid mitochondrial DNA, and Lilian Blanco with the question of what aphids do to plants.

Ros Blanche won a prize (shared basis) for Best Student Presentation from the Ecological Society of Australia in Canberra on 4th October. Her talk was titled "Preliminary observations on variations in abundance of the seaweed fly, *This canus* (Diptera: (Coelopidae)". The work was actually done at UNE; Ros is now working on gall insects for her PhD at Macquarie.

The School has scored substantially better in ARC than last year. With $384,300 in grants perhaps we'll see some new insects around in 1992.

Sydney University — Medical Entomology, Westmead Hospital

Richard Russell spent three weeks in August in Europe. He visited the London School of Hygiene and the Liverpool School of Tropical Medicine in England. He also attended the Society for Vector Ecology Annual Meeting of the European Region in Hungary, and presented a paper on the dog heartworm research he is conducting with Merilyn Geary, and a paper on the arbovirus research involving Peter Wells and John Clancy.

Peter Wells has been busy undertaking vector competence studies, while John Clancy has been analysing mosquito catch data collected over the last seven years by the Arbovirus Surveillance Programme. Both Peter and John are also working to finish the annual Arbovirus report for the 1990/91 season.

Stephen Doggett has been continuing work on Lyme Disease, spending part of his time on field trips collecting ticks, and the rest of subculturing spirochaetes isolated from tick gut contents.

Merilyn Geary has been continuing to work on dogheartworm, and to maintain mosquito colonies held in the insectary.

Visitors included Caroline Peters from the Victorian Institute of Animal Sciences, and Annette Broome from the Department of Microbiology, Western Australia, both of whom work on the Arbovirus Surveillance Programmes of their respective states.

Professor Gisli Mar Gislason, from the University of Iceland, Reykjavik, Iceland, is spending six months with us on sabbatical leave. Gisli is Professor of Limnology in the Department of Biology, and is also Director of the Institute of Biology. His major entomological interests are with the Trichoptera and the Simuliidae, but he has broadened our minds if not our tastes detailing some of the exotic culinary

dishes enjoyed by himself, but not all Icelanders. Gisli has been involving himself in the various Departmental projects and has also been on field trips with Stephen collecting ticks.

John CLANCY and Shane McEVEY
Regional Councillors

NEW SOUTH WALES COUNTRY AREAS

Don Scambler reports from his retirement in beautiful Ballina that his work revising the stenoderine cerambycids is continuing, including a recent trip to Sydney.

Lorien Wildlife Refuge

Geoff Williams reports that in the Taree area there seems to be a prolonged period of bushfires (usually out-of-control "control burns"). Several of the sites in which he is studying the composition and interactions of insects associated with rainforest trees have narrowly escaped incineration. Recent visitors included Dr Gerry Cassis from the Australian Museum, and Alan Walford-Huggins from Kamerunga Biological Laboratories.

NSW Agriculture, Dubbo

Ray Pigott has been sampling Plague Locust egg beds in central and northern NSW for parasites and egg development. He has also been speaking at field days on Plague Locusts in general and the likely spring outbreak in particular.

Fowlers Gap Arid Zone Research Station

Lynette McLeod is just finishing up the latest aspect of her project on overwintering strategies of *Lucilia cuprina* and *Chrysomyia rufifacies*.

University of New England, Department of Animal Science

Hainan Gu is currently working on the evolution of dispersal strategy in *Drosophila* spp.

Tweed Shire Council

Clive Easton has been investigating egg-laying in *Culicoides molestus* and checking the viability and distribution of dormant *Aedes vigilax* eggs in wetlands following the long North Coast drought. He is also evaluating the potential of saltwater flushing into floodgated drainage systems to make them less favourable for mosquito breeding.

Yanco Agricultural Institute

David James attended the National Workshop on Red-legged Earth Mite, Blue Oat Mite and Lucerne Flea held in Perth in early September. Whilst there he took the opportunity to visit colleagues at the WA Department of Agriculture.

The work of David James and Jenny Whitney on biological control of grapevine mites reached a wider audience when featured on Channel 7's 11AM show in late September. Christening *Amblyseius victoriensis* and *Typhlodromus doreenae*, respectively, as "Victoria" and "Doreen" has helped considerably in promoting this research, although at least one ABC announcer voiced dismay over these predatory mites having female names! David and Jenny attended the first National Conference of the Australian Society of Horticultural Science, held in Sydney during October, where Doreen and Victoria received another airing.

Myall Vale Agricultural Research Station, Narrabri

Neil Forrester (NSW Agriculture) presented an invited paper (joint author Gary Fitt, CSIRO) at the British Society of Chemical Industry "Resistance 91" Symposium held at Rothamsted Experimental Station in July. While overseas Neil took the opportunity to review the latest developments in the agrochemical industry's research and development programmes, including both biological and conventional chemistry innovations. Neil visited research institutes in France, Italy, Switzerland, Germany and the UK, including Alan McCaffery at the University of Reading.

Gary Fitt and Neil Forrester attended the Workshop on *Bacillus thuringiensis* sponsored by the Standing Committee on Agriculture and held in Canberra in late September. Ian Watkinson, Abbott, Chicago, visited the cotton-growing areas of Queensland and New South Wales en route to the Workshop. He spoke at grower meetings in Emerald, Dalby and Moree.

In early October Gary Fitt and Martin Dillon (CSIRO) attended a 3-day workshop to commence planning of research for the new Centre for Tropical Pest Management in Brisbane. Gary and Martin will be involved in a project to develop a synoptic scale spatial model of insect movement.

Agrisearch Services Pty Ltd, Orange

Martin Collett and his family have just returned from 12 months in England where he undertook a MSc in crop pro-

tection run in conjunction with the Universities of Bristol and Bath at the Long Ashton Research Station. The course involved a mixture of course work, practicals and seminars plus project work.

Agrisearch Services has been working on pests in cotton, pome and stone fruit pests, pasture pests, banana pests, endo- and ectoparasites of sheep and cattle, and domestic, industrial and nuisance pests.

Richard FAULDER
Regional Councillor

VICTORIA

Missing — A poster entitled "Biological Control of Dock" by Peter Cole, Institute of Plant Sciences, Burnley. It was last seen at Melbourne University, Prince Philip Theatre, during the recent AES Conference. It is possible that somebody packed it up with their own poster and isn't aware that they have it. If anybody knows of its whereabouts, could they please call Peter on (03) 810 1511.

Rural Water Commission — Water Quality Assessment Section

It's that time of the year when most people from the invertebrate group spend most of their time in the field collecting samples. Phil Mitchell, Bob Morley and a long list of others, are collecting invertebrate samples from a number of streams throughout the State. Vin Pettigrove has been wandering around the Deniliquin district collecting chironomid larvae. Garry Bennison spends most of his time reviewing reports and working out where everyone else has gone.

University of Melbourne — Department of Genetics

John McKenzie, who was unable to chair a session at the Melbourne Conference in July due to ill health, underwent major surgery in September. At latest report John is recovering well and should be back to limited work shortly and to full capacity by about the beginning of the next academic year.

Jon Martin travelled overseas in August, mainly to participate in the 5th Balbiani Ring Workshop (Chironomid molecular genetics) at a castle outside Mainz, Germany, but also to visit the Natural History Museum in London and to give a seminar at Lubeck in northern Germany. The trip provided the opportunity to meet most of the Europeans working on sex determination (particularly of the male dominant variety), and was therefore very worthwhile. Two of Jon's students have completed post-grad degrees recently. Vince Pettigrove took out his MSc in August for his studies on monitoring of the Yarra, and Stewart Fabb will take out his PhD at the end of October for his studies on a sex-influenced protein in *Chironomus*.

Department of Agriculture — Institute of Plant Sciences, Burnley

Paul Horne and John Osmelak attended the Australian Society of Horticultural Science Conference in Sydney (Macquarie University) at the beginning of October, where they both presented papers. The theme of the Conference was "Clean and Green in the 90's".

Gordon Berg attended the National Workshop on redlegged earth mite in Perth during September which was organised by the RIRC's, the CSIRO Division of Entomology and the Western Australian Department of Agriculture. This Workshop was followed in October by a White Clover Workshop at the Pastoral Research Institute, Hamilton, which was attended by Gordon Berg and Peter Ridland. So both aspects of the RLEM/white clover screening projects at IPS were well covered.

La Trobe University — Department of Genetics and Human Variation

Professor Michael Turelli from the University of California at Davis has arrived to work with Ary Hoffmann on theoretical and cytoplasmic aspects of cytoplasmic incompatibility in *Drosophilia* populations. Ary was an invited participant in a conference on fruitflies in Okinawa recently, and also took part in a Seattle workshop on global warming and ecological/evolutionary research directions.

Lars Jermiin from Ross Crozier's lab attended two meetings in Europe, one on evolutionary biology in general and one on social insects, drumming up support in the form of donations of specimens for his and Ross's work on a molecular phylogeny and biogeography of ants.

Department of Conservation and Environment — Keith Turnbull Research Institute

Donald Dahlsten, Professor of Entomological Sciences, Division of Biological Control at the University of California, has arrived and will spend six months at KTRI as a visiting

has arrived and will spend six months at KTRI as a visiting scientist while on sabbatical leave. Don's research interests include: biological control of forest insects; side effects of chemical insecticides in forest communities; population dynamics of bark beetles and forest defoliators; biology of cavity-nesting birds and impact on forest insect populations; human activity and the creation of entomological problems in montane environments; biological control of pests of urban trees and shrubs. While in Australia, Don will be working on the bluegum psyllid *Ctenarytaina eucalypti*. He will be investigating the natural enemies of the psyllid with the objective of importing them as biological control agents into northern and southern Californian *Eucalyptus* plantations.

Don's expert advice will be invaluable in the elm leaf beetle project at KTRI.

Ross Field has spent 3 weeks in Western Australia on an Australian Entomological Society Research Grant studying the biology and life cycle of the *Ogyris idmo* butterfly complex.

Janet HORNE
Regional Councillor

Insects cabinets for sale

Four hand-made wooden entomological cabinets. Each with 10 solid timber drawers, rosewood finish and in very good condition. The drawers have fitted glass lids, white polyethylene foam lining and naphthalene channels.

Overall cabinet size: 72 x 74 x 63 cm

Internal drawer size: 66 x 3 (above lining) x 58 cm

Price: $900 for one, $1600 for two, $2250 for three, $2800 for four.

Available ex Brisbane. Phone J. Baker (07) 368 3228

Overseas News

PAPUA NEW GUINEA

Samson Laup attended the International Institute of Entomology course on insect taxonomy held in London from 18th- 23rd August, 1991. Ray Kumar and Lastus Kuniata (Entomologist, Ramu Sugar Ltd) carried out a joint locust survey in the drought stricken Markham Valley. Bob Prior and Sim Sar attended the Integrated Pest Management conference in Malaysia. Samson carried out a one week study on areas affected by drought in Markham Valley and made relief recommendations for the affected villages. Brian Thistleton and Roy Masamdu of Taro Beetles Project (Solomon Island) visited Fred Dori, Sim Sar and held discussions with Ray Kumar.

Ray KUMAR
PNG Correspondent

NEW ZEALAND

I have this pre-occupation with flies: I always seem to be writing about them! But maybe this is because of the recent arrival of *Lucilia cuprina* and its impact on the farming industry.

Dr Allen Heath, A Wallaceville entomologist is leading a programme which will hopefully involve nearly every primary school in New Zealand. Called 'Operation Flytrack', a pilot programme is already in place in 70 schools throughout the country. The programme, organised in conjunction with Teacher Support Services will chart the prevalence of flies causing flystrike and monitor the spread of *L. cuprina*. The students will construct flytraps, collect and identify flies and record weather conditions during the trapping period. This data will be sent to Wallaceville.

As well as providing valuable data, the project, which will eventually involve 3000 schools, will give students an opportunity to engage in real science. If the preliminary trials are successful, the project will be undertaken in the early part of 1992.

John TENQUIST
New Zealand Correspondent

News from Affiliated Societies

Entomological Society of Victoria

The Society held its Annual General Meeting on 21 June at which Mark Hunting gave his out-going Presidential Address entitled 'Hilltopping in southeast Queensland'. The office bearers elected at the AGM for 1991/92 were:

President	Ross Field
Vice Presidents	Peter Kelly
	Ian Faithful
Hon Secretary	Ken Walker
Hon Treasurer	David Crosby
Hon Editor	Mali Malipatil
Excursion Sec	Peter Carwardine
Public Officer	David Crosby
Past President	Mark Hunting
Councillors	Joy Burns, Kelvyn Dunn, Graham Krate, Tim New, Berry Vardy

Nancy Endersby addressed the General Meeting on August 16 with a talk entitled: 'Reduced use of synthetic insecticides: control of cabbage white butterfly and diamond back moth'. Tim New spoke at the October meeting on the 'Conservation of swallowtail butterflies'.

The Society is calling for nominations for its annual J.C.("Zoo") Le Souef Memorial Award. This is awarded for contributions to amateur entomology in Australia. Nominations may be made by any individual or body, and should contain sufficient information for the Awards Committee to be able to appraise the contribution made by the nominee. It is not expected that nominations should be excessively lengthy, but documentation (such as publications, if any) on loan would be appreciated. Nominations remain current for three years and should be sent to the Society's Secretary (Ken Walker, Museum of Victoria, 71 Victoria Crescent, Abbotsford, VIC 3067).

Ross FIELD
Representative Councillor

Entomological Society of New South Wales

The August meeting was held at Rydalmere and corresponded to the dusting off, reframing and rehanging of many of Zeck's drawings after the refurbishments. The theme was entomologists of the past and included talks on: "The life and times of W.W. Froggatt' by Ted Taylor; "Frederick (A.A.) Skuse" by Dan Bickel; "Entomology in NSW Agriculture" by Murray Fletcher; and "E.H. Zeck and the Better Farming Train (1927-28)" by Graham Goodyer.

Densey Clyne spoke at the September meeting on the green tree ant *Oecophylla smaragdina*. As usual her talk was superbly illustrated.

Maryann Terras spoke to the October meeting on the arthropods invading plant tissue cultures.

Graham BROWN
Representative Councillor

Entomological Society of Queensland

A special event was the 8th Perkins Memorial Lecture held on 14 October. This biennial lecture is to honour the memory of Frederick Athol Perkins who was the first head of the Entomology Department at the University of Queensland, as well as one of the founders of our Society. Tim New of the Zoology Department, La Trobe University spoke on 'Swallowtail Butterflies as Flagships for Insect Conservation".

Another highlight was the well attended 'Notes and Exhibits' evening held on June 11. Pat Marks exhibited two hand coloured engraved plates of insects, thought to be from 18th Century natural history books. Geoff Monteith reported on the progress of the tour of the Queensland Museum's exhibition, 'The Butterfly Man of Kuranda'. Robert Raven gave a summary of some of the symposia held at the Pacific Science Congress (May 26–June 2). Judith Melksham of the Alan Fletcher Research Station spoke on 'The Rise and Fall of the Groundsel Gall Midge *Rhopalomyia californica* in South East Queensland'. Professor Ray Kumar, Principal Entomologist in PNG, gave an address entitled 'Emerging Insect Pest Problems on the PNG Agricultural Scene and their Management'.

At the meeting held on August 12 Myron Zalucki (University of Queensland) outlined the history and current situation of the new Centre for Tropical Pest Management.

Jan Green (University of Queensland) spoke on 'Coexistence of Two Mygalomorph Spider Species' at the September 9 meeting.

Christine NEALE
Representative Councillor

CONSERVATION COMMITTEE NEWS

The second issue of the Endangered Species Network Bulletin appeared in June with Barbara York Main's article on Trap Door Spiders. We have an article for the third issue ready on ant diversity by Penny van Oosterzee, but after that a gap. If anyone would like to write a short (700 word), chatty, illustrated, article on a topic of invertebrate conservation interest close to their heart, we would be very pleased to have it for submission to the Bulletin. The article would be widely read throughout Australia by all those people who are involved with conservation but who on the whole are unaware of the importance of invertebrates.

The RAC (Resource Assessment Commission) Kakadu report was produced in May. Alan Andersen was officially asked to comment on it and he has kindly sent his reply to me which I will summarise. Alan's main criticism is that conservation interests in the Plan are very much underrepresented in comparison with Aboriginal interests. For instance there is only one member of the Board representing conservation as opposed to ten out of fourteen representing Aborigines. Also, the proposed re- establishment of traditional burning practices may not be in the best interests of preserving the current native flora and fauna. We have prepared a submission to the draft RAC's Forest and Timber Resources draft report. We feel it is a good report no doubt partly because our previous submission to the Joint Committee on Southeast Forests is quoted extensively in the section on invertebrate faunas. Our latest submission mainly stresses again the consideration of invertebrate habitat and I can send a copy to anyone who would like to see it.

While overseas, I was hoping to talk to those involved with the Invertebrate Site Register at Monk's Wood in England in order to compare it with our project registering sites as part of the National Estate. Besides the UK, a number of European countries have published Red Data Books listing rare, threatened and endangered invertebrates. For instance, Czechoslovakia and Finland. Protection of habitat however, may not be receiving the same attention. I travelled in the hills around Coimbra in Portugal where the native *Pinus* forest is being gradually replaced by *Eucalyptus globulus* both deliberately in plantations and accidentally by natural spread as the species is naturalised. An *Acacia* also from Australia is also vigorously invading disturbed areas. The loss of understorey species and top soil which is resulting is serious and widespread.

A report on the Conservation Biology Meeting at Queensland University in early October is given below. Another initiative of the Conservation Committee (endorsed by the Executive) is to prepare an Australianised version of the Council of Europe Committee of Ministers on the protection of saproxylic organisms and their biotopes (Recommendation No. R (88) 10,. We are planning to submit it to the Committee of Conservation and Environment Ministers of Australia and New Zealand for consideration and hopefully adoption. More of that in the next *Myrmecia* when I hope a copy of the Recommendation can be published. Meanwhile if anyone who has a particular interest and knowledge of log faunas would like to see it and make comments, please let me know.

Our invertebrate site registration project is nearly completed in Victoria, and we have started registering sites in South Australia and New South Wales. Robyn Coy is our project officer in Victoria but we are looking for people to assist in the registrations in both South Australia and New South Wales. If there is any graduate in Entomology or Invertebrate Zoology with an interest in invertebrate conservation and knowledge of either of these two States who would like a few months contract work this year, could they please contact me?

Penelope GREENSLADE
CSIRO Division of Entomology
GPO Box 1700
CANBERRA ACT 2601

REPORT OF CONFERENCE ON CONSERVATION BIOLOGY IN AUSTRALIA AND OCEANIA

The meeting was held at the University of Queensland from September 30th to October 4th hosted by the Centre for Conservation Biology of that University and the Queensland National Parks and Wildlife Service. I attended together with Rhondda Jones and Alan Andersen from the Conservation Committee. As might be expected, other invertebrate people were rare (but not endangered I hope) and included Alan Yen, Pierre Horwitz, Andrew Beattie, Tracey Churchill and Greg Shirley from New Zealand. Altogether the conference was very well attended with over four hundred people coming from a wide range of organisations; universities, CSIRO, Forestry Commissions

and State and Federal Conservation and Environmental Departments and some private consultants and NGO's. There were, perhaps oddly, few people from Museums. This was a pity as a considerable discussion centred on the poor state of taxonomic knowledge of our invertebrate fauna and what we should do about it ... but more of that later.

The opening address was given by Harry Recher who urged us to be much more active in promoting conservation to the politicians and the public and made an appeal for a halt to all clearing of native vegetation now. Overseas speakers included Dan Simberloff and Peter Ashton from the States while Peter Bridgewater (ANPWS) and Andrew Burbidge (WA CALM) also gave introductory lectures.

The rest of the meeting was divided into symposia with a small number of invited speakers and a larger number of contributed papers. The symposia titles were habitat fragmentation, land degradation and restoration, introduced species, taxonomy and genetic resources, ecosystem conservation and reserve design, conservation biology in Oceania, marine conservation and biodiversity plus extra sessions, in the contributed paper section, on threatened species, *Phytophthora*, koalas, NGO, conservation genetics and invertebrate conservation. We invertebrate specialists were not enthusiastic about this last as we felt our contributions would simply be delivered to an audience consisting of only ourselves. In fact this was largely but not entirely the case.

Of interest to us here in particular was the increased realisation that invertebrates must be considered in conservation evaluation and of the problems they pose. A trend among ecologists is to see the taxonomic impediment as insuperable and to decide that, since the description of all species is impossible, it follows that it is undesirable. Instead it is suggested for survey work that teams of "parataxonomists" should be trained (by taxonomists) to distinguish "morphospecies" and the morphospecies then grouped into guilds or more fashionably "functional groups". I am becoming increasingly uneasy about this trend and as one of the very few invertebrate taxonomists at the meeting (<0.5%), had difficulty in finding any support for my reservations. One of the problems as I see it is that a parataxonomist, coming so to speak from the top down, has difficulty in distinguishing which morphological features are of specific importance and tends to distinguish species on attributes such as size, colour and shape. Shape may be all very well in hard bodied creatures but Collembola are very susceptible to distortion during handling and preservation. Hence specimens of the same species are frequently determined as different "morphospecies" by "parataxonomists". This of course leads to more work for the taxonomist in the long run.

Other general items discussed were the need for uniform methods of reserve design and survey, the disastrous effects of fragmentation on populations either in abundance or in genetic diversity, degradation in the arid zone, the difficulties countries in the southwest Pacific face with their complex systems of land tenure in protecting overharvesting of endangered species such as turtles and coconut crabs and the trend to consider some species "redundant". The latter are, as I understand it, those species which we can afford to loose without affecting the functioning of any ecosystem. Estimates have been made of between 50 to 70% of redundant species in some habitats. How these figures were arrived at we were not told but it is a dangerous concept for conservation.

The final plenary session attempted to endorse not only general resolutions but also a large number which emanated from the individual workshops. In the end this proved an impossible task and the meeting ended in somewhat of an anticlimax discussing how and when the workshop resolutions should be dealt with. The take-home message for us was that we should be encouraged by the fact that an increasing number of conservation biologists are aware of and take account of invertebrates. However systematists have still a long way to go in convincing other biologists that their information is both relevant and can be produced quickly enough for it to be useful in conservation evaluation and environmental assessments. What is needed is a practical tool to enable land to be assessed for its invertebrate conservation value in EIS's and the like. What is also desperately needed is a *practical* plan for invertebrate conservation that can be applied *now*. There are a few ideas around and if you have any, do please pass them on. Both Alan Yen (Melbourne Museum) and I would very much like to hear from you.

Penelope GREENSLADE

MERGER OF TWO NORTHERN TERRITORY INSECT COLLECTIONS

A recent review of the entomological collections held at the Department of Primary Industries and Fisheries' Berrimah Agricultural Research Centre recommended that the collection should reflect more the requirements of the Department. It should consist mainly of those insects, and allied forms, of significance to the horticultural, agricultural, pastoral, forestry and veterinary industries as well as biological control agents and closely related species required for comparative purposes.

It was recommended, therefore, that all the non-economic material be transfered to the Northern Territory Museum of Arts and Science in Darwin. This transfer has now taken place.

Interestingly, the Collection held by the Department had its origin in the 1950's when it was known as the NT Museum Collection under the then Northern Territory Administration. In fact, many of the specimens are labelled NT Museum Branch. The bulk of the Collection, however, dates from the early 1970's when much general collecting was carried out through the Territory.

The enormous development of primary industries, particularly of horticulture in the 1980's, combined with a lack of taxonomic and curatorial expertise, caused general collecting to be all but abandoned. Now, in line with the objectives of the Department and the requirements of industry, emphasis is to be placed on economic species.

The Northern Territory Museum of Arts and Sciences naturally welcomed the transfer. The material has now been stored side by side with the Museum Collection pending the purchase of new cabinets. The rather daunting task of incorporating the equivalent of around fifteen to twenty 10-drawer cabinets of insects into the existing Museum Collection has begun and all types have been entered on the NT Museum Entomology Department Register.

The DPI&F collection, representing the insect fauna of the Northern Territory of 20 to 30 years ago (the Museum Collection dates from only the late 1970's), is important as an historic record. In addition, the identified specimens add to the immediate usefulness of the NT Museum Collection for reference purposes, and the larger amount of unsorted material will be available to research workers, whom it is hoped, the Museum will now be able to attract.

Alice WELLS and Murray UPTON

Agenda for Hobart Annual General Meeting

Australian Entomological Society Incorporated
23rd Annual General Meeting
University of Tasmania
at 4.00 pm on Tuesday, February 4th 1992

Agenda

1. Opening
2. General Announcements
3. Announcements of Proxies and Apologies
4. Deaths of Members Recorded Since 22nd Annual General Meeting
5. Minutes of 22nd Annual General Meeting (published in *Myrmecia*, August 1991).
6. Matters Arising From the Minutes
7. Executive Annual Report, including reports of Treasurer, Chief Editor, News Bulletin Editor and Business Manager
8. Committee Reports
   (i) Conservation Committee
   (ii) Marketing Promotion Committee
9. Competitions and Awards — announcements:
   (i) Phil Carne Student Prize 1992
   (ii) Biological Illustration Competition 1992
   (iii)1992 Ian Mackerras Medal
10. Australian Entomological Society Research Grants — announcements of recipients
11. Business Arising from the 43rd Council Meeting
12. Announcements of Office-Bearers and Councillors for 1992
13. Report of the 23rd Annual General Meeting Organising Committee
14. Report of the 24th Annual General Meeting Organising Committee
15. Other Business (arranged with the secretary no later than 7th January, 1992)
16. Close

CSIRO Journals Subscription Form

CONCESSION RATES FOR MEMBERS

Members are reminded that membership of the Australian Entomological Society entitles them to subscriptions to Journals published by CSIRO at substantial concessions. If you wish to subscribe to one or more of the Journals listed, please tick the appropriate boxes on the adjacent form and forward it to the Treasurer with the correct money by 31 December. Cheques should be made payable to the Australian Entomological Society.

One of the reasons for Societies being offered concessions is that it reduces paperwork (and therefore costs) if CSIRO receives one large order rather than many small ones. For this reason please ensure that your order is sent to the Treasurer on time. While CSIRO have generously allowed concession prices to apply even on late individual orders this year, it does negate the advantages of them providing bulk concessions and they may not allow it in future.

Members are reminded that back issues of all Journals are available from CSIRO Publication Sales.

This Society acts only as an agent for the CSIRO Publication Sales Office. We are not involved in setting prices, publishing the Journals or sending them out to subscribers. While the Treasurer is happy to pass on complaints to the appropriate people it will be more expedient if members who have problems with non-receipt of Journals communicate directly with:

Mr T. HAMILTON
CSIRO Publication Sales
PO Box 89
EAST MELBOURNE VIC 3002

Journal	Normal Price	Member Price	
Australian Journal ofAgricultural Research	$180	$90	☐
Australian Journal of Botany	$170	$85	☐
Australian Journal of Chemistry	$390	$195	☐
Australian Journal ofExperimental Agriculture	$190	$90	☐
Australian Journal of Marine and Freshwater Research	$170	$85	☐
Australian Journal of Physics	$225	$85	☐
Australian Journal of Plant Physiology	$170	$85	☐
Australian Journal of Soils Research	$170	$75	☐
Australian Journal of Zoology	$170	$85	☐
Australian Systematic Botany	$150	$75	☐
Australian Wildlife Research	$170	$75	☐
Invertebrate Taxonomy	$220	$95	☐
Reproduction, Fertility and Development	$170	$85	☐

Name: .....
Address: .....
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Return completed forms to:

Mr Peter R. DAVIS
AES Treasurer
Agriculture Protection Board
Baron-Hay Court PERTH WA 6151

Coming Events

19TH INTERNATIONAL CONGRESS OF ENTOMOLOGY

If you didn't get a second announcement pamphlet for the Congress, and would like one, contact Jane Wright, CSIRO Entomology, GPO Box 1700, Canberra, ACT 2601 (Phone 06-2464183, Fax 06-2464202).

5TH AUSTRALIAN APPLIED ENTOMOLOGICAL RESEARCH CONFERENCE

The theme of this major conference will be "Pest Control and Sustainable Agriculture". It is to be held at the Australian National University, Canberra, over the period April 27 to May 1, 1992. The conference is approved by the Australian Standing Committee on Agriculture, and is being organised by the CSIRO Division of Entomology.

Sessions for the conference are expected to be: Integrated Pest Management, Pest Damage Assessment, Inundative and Inoculative Biological Control, Chemical Control, Cultural Control, Host-plant Resistance, Pheromones, Biotechnology and Molecular Biology, Modelling and Forecasting Pest Populations and Pollination Biology.

Further details are available from:

Dr Wendy MILNE
CSIRO Division of Entomology
GPO Box 1700
CANBERRA ACT 2601

8TH INTERNATIONAL SYMPOSIUM ON BIOLOGICAL CONTROL OF WEEDS

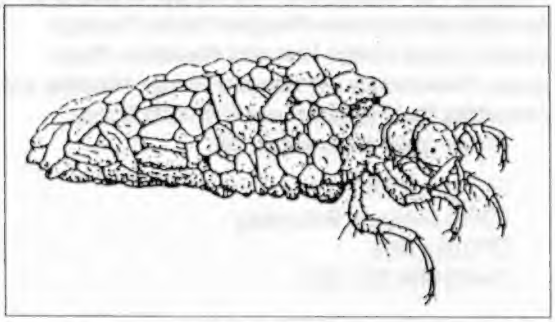
To be held at Lincoln University, Christchurch, New Zealand, during the period 2-7 February, 1992. Information is obtainable from:

Ms P. SYRETT
DSIR Plant Protection Private Bag
Christchurch NZ

XII INTERNATIONAL CONGRESS OF ARACHNOLOGY

This Congress will be held at the Queensland Museum in Brisbane from 12–18th July, 1992. Details are available from: The Secretary, XII International Congress of Arachnology, Queensland Museum, Box 3300 SOUTH BRISBANE Q 4101.

7TH INTERNATIONAL SYMPOSIUM ON TRICHOPTERA



The Symposium will be held at the Umea University campus, Sweden, on August 3-8, 1992. Contributions will be presented in form of lectures and poster displays. Registration forms and abstracts should reach the Convener by 31 December, 1991. Further information and registration forms available from Dr A. Neboiss, Department of Entomology, Museum of Victoria, 71 Victoria Crescent, Abbotsford, VIC 3067.

REMINDER!

23RD AGM OF AUSTRALIAN ENTOMOLOGICAL SOCIETY

Registrations by 15th December 1991 to:

Dr J. IRESON
Department of Primary Industry
St John's Avenue
NEWTOWN TAS 7008

The 1992 Conference and AGM of the Society will be held at the University of Tasmania in Hobart during the period February 2–6, 1992. A brochure with full details was enclosed with the August issue of *Myrmecia*.

When completing registration forms, please note:

1. The cost of the welcoming dinner is included in the registration fee.
2. The excursion fee includes the cost of the evening meal. The option "Evening Meal Only" allows delegates and accompanying persons to opt out of the excursion but join in evening activities.

Lionel Hill (Devonport) and Tim Kingston (Launceston) are willing to assist people attending the Hobart conference

AUSTRALIAN ENTOMOLOGICAL SOCIETY

XXIII CONFERENCE & A.G.M.

HOBART

1992

if they wish to extend their visit for collecting purposes. One possibility is to book accommodation at a field study centre in northern Tasmania and arrange transport. Please contact Lionel Hill (004 240236 B.H.) DPI, Tasmania, PO Box 303 Devonport TAS 7310.

Book Notices

THE BANCROFT TRADITION

Edited by John Pearn and Lawrie Powell. 268 pages. Hard cover. Twelve authors have combined to produce this copiously illustrated, comprehensive account of the life and times of Dr Joseph Bancroft, Dr Thomas Bancroft and Dr Josephine Mackerras — a three-generation medical dynasty. All made pioneering discoveries in the field of medical entomology and this fascinating book gives a unique insight into the early development of this science in Australia. Available

for $24.95 (incl. postage) from **Amphion Press**, Department of Child Health, Royal Children's Hospital, BRISBANE Q 4029.

REPRODUCTIVE BEHAVIOUR OF INSECTS — INDIVIDUALS AND POPULATIONS

Edited by W.J. Bailey and J. Ridsdill-Smith. 352 pages. Hard cover. Chapman & Hall. Price $134.95. Thirteen authors, mostly Australian, provide a summary of what is known of insect reproduction with behaviour as a central theme. It has an evolutionary perspective, focusing on the ways selection may have taken place to fashion the process of reproduction.

ACOUSTIC BEHAVIOUR OF INSECTS — AN EVOLUTIONARY PERSPECTIVE

By W.J. Bailey. 240 pages. Hard cover. Chapman & Hall. Price $134.95. This book provides an overview of current research into the fascinating area of sound communication in insects, with particular emphasis on the evolution of this method of communication within the context of the insect's natural history.

PROCEEDINGS OF A SEMINAR ON PESTS AND DISEASES OF FOOD CROPS — URGENT PROBLEMS AND PRACTICAL SOLUTIONS

Edited by Professor Ray Kumar. 105 pages. Soft cover, spiral bound. Published by the Agriculture Protection Division, Department of Agriculture and Livestock, Papua New Guinea (PO Box 2141, Boroko, PNG). This collection of papers is the proceedings of a seminar held in Port Moresby in February 1991. It gives a comprehensive treatment of the current and emerging pest problems of a great range of crops in this near neighbour of ours to the north. Many of the problems are shared, or have parallels, in our tropical north. Available free from Ray Kumar at his address on the back cover of *Myrmecia*.

THE AUSTRALIAN DRAGONFLIES — A GUIDE TO IDENTIFICATION, DISTRIBUTIONS AND HABITATS OF AUSTRALIAN ODONATA.

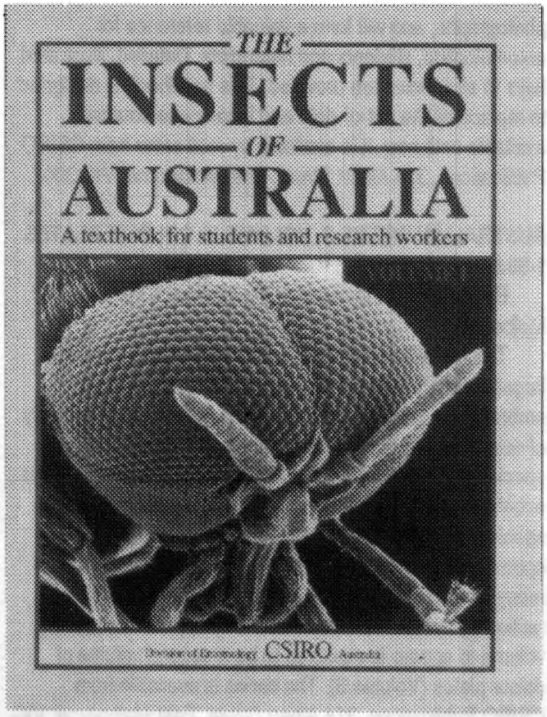
By J.A.L. Watson, G. Theischinger and H.M. Abbey. Hardcover. 288pp. CSIRO, Melbourne. $60 (incl. postage).

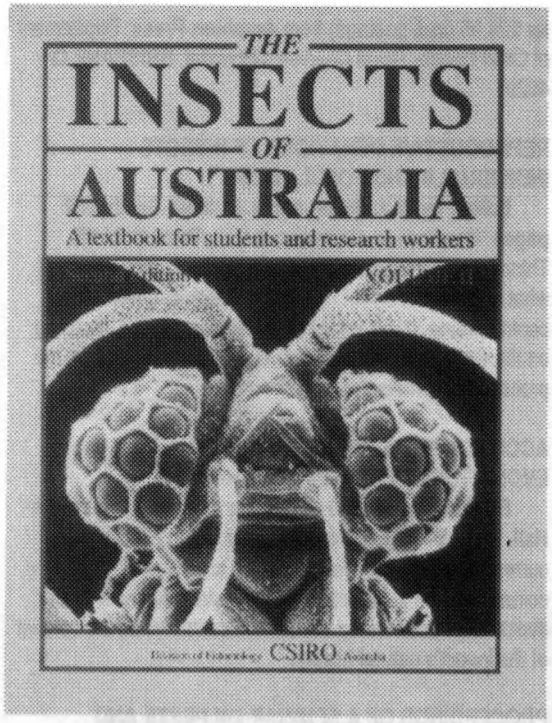
This long-awaited guide to Australian dragonflies and damsel flies includes 55 colour and 20 black and white photographs, and will form a valuable reference for entomologists, students and naturalists. Detailed, illustrated keys to all species are provided. This handbook is designed to replace all the out-of-date and incomplete sources available until now. It is available by mail order from CSIRO Publications, 314 Albert Street, East Melbourne, VIC 3002.

AUSTRALIAN WEEVILS. VOLUME V. COLOUR PLATES 1-304.

By Elwood C. Zimmerman. Hardcover. 632pp. CSIRO, Melbourne.

The first volume of this exciting review of Australia's largest insect family is out. Elegantly bound and gold embossed, it is Volume 5 in the series and consists entirely of colour photographic plates of more than one thousand species of Australia weevils. The colour photographs are of excellent quality showing dorsal and lateral views of each species. The identification captions are on text pages opposite each page of photographs and these incorporate many new and revised taxonomic names which will be ratified by the text volumes when they appear. The next volume to appear is expected to be a second volume of colour plates (Volume 6). The series is available from CSIRO Publications, 314 Albert Street, East Melbourne, VIC 3002.



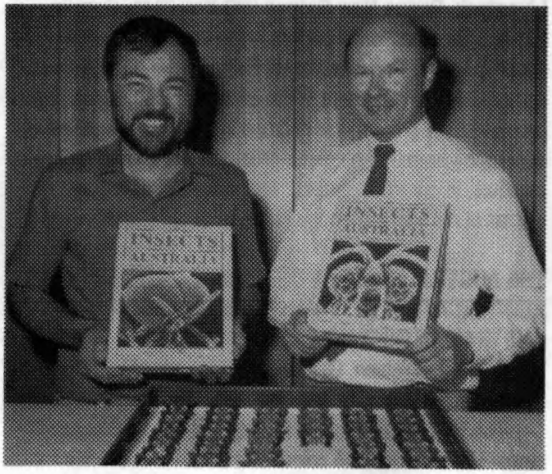


LAUNCH OF "INSECTS OF AUSTRALIA"

Another major milestone in Australian Entomology occurred in Canberra on November 8 when the Minister for Science and Technology, Ross Free, launched the new edition of "Insects of Australia". The ceremony took place before a large gathering of entomologists at the CSIRO Division of Entomology where the Minister presented Chief Editor, Ian Naumann, with a leather-bound set of the book.

This massive, 1100-page, 2-volume work is a compilation of information from more than 70 specialist authors of which about two thirds are Australian, a strong central core being based in the CSIRO Australian National Insect Collection. It is a complete revision of the now twenty-year-old first edition. As well, several new chapters have been added. It has more than 2000 illustrations and is expected to take its place beside the first edition as one of the leading scientific works to emanate from Australia. Like that first edition, it will undoubtedly become adopted as a standard teaching text in many overseas countries. The new edition was financially

Ian Naumann and Head of the ANIC, Ebbe Neilsen, with the new edition.



Minister, Ross Free, presents a leather bound set of the new "Insects of Australia" to a beaming (and relieved) Chief Editor, Ian Naumann.

sponsored by the Utah Foundation, the Ian Potter Foundation and Wellcome Australia. Fittingly, it is dedicated to Ian Murray Mackerras, the editor and moving force behind the original "Insects of Australia".

The discount offer for the new edition generously made through the Australian Entomological Society by the publishers, Melbourne University Press, exceeded our wildest expectations and we have now distributed 375 sets, totalling about 1.5 tonnes in weight. The discount offer is now closed.

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